

ON INTUITION
AND DISCURSIVE REASONING
IN ARISTOTLE

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VICTOR KAL

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BY

VICTOR KAL



E.J. BRILL
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ABBREVIATIONS

Note. If the bibliography contains only one work by a certain author, and if a certain work in the bibliography is marked with an asterisk, the author is referred to in the notes by name only. In other cases additional information is given, usually a date. Aristotle's works are referred to by their titles only, these being abbreviated as follows:

<i>Cat.</i>	<i>Categoriae</i>
<i>De int.</i>	<i>De interpretatione</i>
<i>An. Pr.</i>	<i>Analytica Priora</i>
<i>An. Post.</i>	<i>Analytica Posteriora</i>
<i>Top.</i>	<i>Topica</i>
<i>S. E.</i>	<i>Sophistici Elenchi</i>
<i>De gen. et corr.</i>	<i>De generatione et corruptione</i>
<i>Phys.</i>	<i>Physica</i>
<i>De an.</i>	<i>De anima</i>
<i>De sensu</i>	<i>De sensu et sensibilibus</i>
<i>De mem.</i>	<i>De memoria et reminiscencia</i>
<i>De part. an.</i>	<i>De partibus animalium</i>
<i>De gen. an.</i>	<i>De generatione animalium</i>
<i>Met.</i>	<i>Metaphysica</i>
<i>E. N.</i>	<i>Ethica Nicomachea</i>
<i>Pol.</i>	<i>Politica</i>
<i>Rhet.</i>	<i>Rhetorica</i>

INTRODUCTION

Aristotle lived from 384 to 322 BC. The interpretation of his work, which starts with his pupil Theophrastus, is by no means concluded today, more than two millennia later. Scholars have failed to reach agreement on important issues. One of these is the question of what role Aristotle assigns to induction.¹ Moreover, some parts of Aristotle's work are still felt to be somewhat cryptical. The most famous and arguably most important example of these is his exposition on the mind in *De anima* III 5.² In the following study I shall attempt to arrive at a closer understanding of several widely discussed, but persistently difficult chapters in Aristotle's work.

The subject of this study is intuition and discursive reasoning in Aristotle. We will be concerned with the distinction between intuition and discursive reasoning and with the relation which Aristotle establishes between both.

It is not unusual to distinguish between intuition and discursive reasoning with regard to Aristotle. This distinction plays a role in well-known studies by, for instance, Hamelin, Le Blond, Ross, Oehler, and Von Fritz.³ The terms 'intuition' and 'discursive reasoning' are actually used in these studies. The term 'intuition' in this context has nothing to do with introspection or any such notion. Nor should intuition as it is discussed here be regarded as a kind of instinct or as an extraordinary type of intuitive faculty. The term 'intuition' serves here to translate a Greek word which also signifies 'mind'.⁴ The term 'intuition' indicates an important function of the mind: the mind inasmuch as it can have insight or cognition. This is the knowing mind. On other occasions Aristotle uses the same Greek word in a less specific sense to indicate broadly the human mind in all its functions.⁵ Besides intuition, these include the function of discursive activity. The discursive mind is the mind inasmuch as it reasons, argues, or orders; it is the thinking mind. Sometimes Aristotle uses a special Greek word to indicate the thinking mind, other times he does not.⁶ By the distinction between intuition and discursive reasoning, therefore, we mean the distinction between knowing and thinking, between the view which the mind has cast upon the world and the reasoning, arguing activity of the mind. Our aim is to bring out in full relief the distinction which Aristotle makes between intuition and discursive reasoning and to draw in a consistent manner the line which separates one from the other in his work. Our main resource will be to

determine precisely what relation, in Aristotle's view, exists between both.

We approach the subject of our enquiry by investigating the forms of argumentation and reasoning which Aristotle distinguishes. These forms of discursive reasoning can also be called procedures of thought; the works in which Aristotle discusses these procedures are regarded as his logical works.⁷ Hence the first part of this study is entitled: 'Knowing and thinking in Aristotle's logical works'.

Our enquiry into the forms of discursive reasoning distinguished by Aristotle begins where he himself begins his logical expositions, namely at the syllogism, i.e. an argument or chain of reasoning consisting of a pair of premisses and a conclusion drawn from the premisses. This enquiry will show that Aristotle distinguishes between two kinds of premisses, and thus between two kinds of discursive reasoning: dialectical syllogism and demonstrative syllogism. Within dialectic he makes a further distinction between two discursive procedures: the dialectical syllogism proper and induction. First we deal with the dialectical syllogism proper, which again occurs in two forms. And our discussion makes the following points: that the dialectician obtains the premisses of the argument in a manner characteristic of the dialectical method; that in argumentation or discussion the dialectician is a tactician; finally, that he can also be called a logician, since he knows about the rules of reasoning. By this time we are discussing *Metaphysics* Gamma with the purpose of showing how far the competence of the dialectician extends, and in order to make more explicit what the differences are between dialectic and proof or demonstration. The interpretations of *Metaphysics* Gamma which I present are certainly not generally accepted. But a discussion with other interpreters has been omitted in this section, since it is meant to be a brief intermezzo. Finally, we examine the function which Aristotle assigns to dialectic in connection with the difficulty of speaking in a demonstrative way about the premisses or principles upon which demonstration or proof is based.

Next, we turn our attention to the other form of dialectic, induction. This is the first controversial topic in our discussion. I defend the view that in *Topics* I 12, *Topics* VIII 1 and 2, and *Prior Analytics* II 23 Aristotle is talking about the same form of induction. I reject the view found in Ross, for example, that in *Prior Analytics* II 23 Aristotle speaks of a complete induction, i.e. an induction in which all special cases falling under a general rule are actually enumerated.⁸ Next, I emphasize once again that induction too is a form of dialectic. This means that it is limited in the function which it can exercise in relation to the premisses or principles upon which the proof is based. By means of induction these prin-

ciples can only be established dialectically. Induction, therefore, cannot demonstrate the principles of the proof, nor can it make them known as *demonstrative* principles to those who do not yet have these principles at their disposal.

Finally, we discuss the other major type of discursive reasoning: the proof or demonstrative science. The proof is distinct from the dialectical syllogism by the nature of its premisses and by the manner in which we acquire these principles. In *Posterior Analytics* I Aristotle nominates the definition and the mind (intuition) as that which gives access to the principles of the proof.

The seven short chapters in which the above-mentioned forms of discursive reasoning are discussed lay the foundation of what follows. These chapters contain but few points which have not been brought forward by others. In the controversy about *Prior Analytics* II 23 I take a stand. The rest is largely a matter of emphasis; it must be made clear along what lines Aristotle distinguishes between the various forms of discursive reasoning, and also why it is a limited function which he assigns to dialectical syllogism and induction in relation to the principles upon which the proof is based. For that reason these chapters, though possessing an introductory and preparatory character, are important for the rest of my argument.

The current view is that, according to Aristotle, we come to know the principles of the proof by means of induction. This is the interpretation of, for instance, Ross, Le Blond, Kapp, S.Mansion, Oehler, Von Fritz, Tricot, Barnes, and Guthrie.⁹ Hamlyn shares this view, but has also shown that, contrary to received opinion, induction does not have this function in a number of chapters.¹⁰ Hamlyn, therefore, does not deviate from the equally current view that Aristotle distinguishes several forms of induction. This position is worked out in detail by Ross and Von Fritz especially.¹¹ On the other hand, the various interpreters do recognize that the principles of the proof are also made known by the definition and the intuitive mind. And because in *Posterior Analytics* II 19 Aristotle relates induction and intuition in a certain manner, it is generally concluded that access is gained to the principles of the proof by means of what is called an intuitive, direct induction.¹² This form of induction is thought to differ from the induction familiar from the *Topics* or *Prior Analytics* II 23.¹³ But no attempt is made to determine precisely what place must be accorded to the definition, though it is co-nominated by Aristotle as giving access to the principles of the proof.¹⁴ It is not made clear how Aristotle's detailed discussions of the definition in *Posterior Analytics* II are connected with the last chapter of this book (II 19), which deals with experience and intuition.

Now after the various chapters on dialectic and proof, instead of prematurely naming induction as the procedure by which we come to know the principles of the proof, I propose to follow up first the indications given in *Posterior Analytics* I and to examine what Aristotle says in the *Posterior Analytics* about the definition and the mind (or intuition). It will emerge that the definition, though not a syllogism, is a form of discursive activity. This explains why the definition can only partly solve the problem of how we come to know the first principles of the proof. For, as gradually becomes clear in Aristotle's discussion of the definition in *Posterior Analytics* II, it is discursive activity as such that raises a problem for Aristotle. The reasoning mind is unable to establish the principles of the proof, inasmuch as these are simple, by means of a syllogism or to determine them by means of a definition. Moreover, the activity of discursive reasoning as such does not relate the knower to reality. In my opinion, Aristotle here sees himself confronted with the fact that it is impossible to grant discursive reasoning an unlimited scope. In connection with the problem of how we come to know the principles of the proof, he is compelled to introduce an intuitive mind that does not reason.

This interpretation is not new in every respect. Those who believe that an intuitive induction is found in Aristotle also point out that it is impossible to prove the principles of the proof.¹⁵ But they do not show how Aristotle only gradually reaches the conclusion in *Posterior Analytics* II that these indemonstrable principles cannot be known by means of a definition either. And it is in this context that he introduces two major problems concerning discursive activity, namely the way in which the simple object can be known and the relation between reasoning and reality. These are the problems which force Aristotle to postulate an intuitive cognition; this intuition has a simple object and is relation to reality.

At the same time I shall defend the view that this intuitive form of knowing in no way coincides with induction nor is to be considered a special form of induction. The text of *Posterior Analytics* II 19 in which Aristotle connects up induction and sensation allows, I believe, an alternative explanation. Aristotelian induction is always a discursive induction. Our interpretation of *Posterior Analytics* II 19, which shows that this chapter forms no exception, follows necessarily from the preparatory chapters of this study dealing with the various discursive procedures. And on the basis of these chapters it is impossible that induction, which is no more than a *dialectical* procedure, should provide us with knowledge of the principles of the *proof*.

If what we have said so far holds good, it will be possible to make a strict distinction between intuition and discursive reasoning, between knowledge of reality and argumentation using concepts and propositions.

Intuition does not construct on the basis of prior knowledge, whereas a discursive procedure cannot but proceed on the basis of other knowledge. The intuitive mind does not reason and argue; it knows.

Aristotle's expositions on the various kinds of discursive reasoning which he distinguishes result in the introduction of a non-discursive form of knowing. In the second part of this study we subject this cognition to a closer scrutiny. We defend a rather unusual viewpoint here, namely that in relation to Aristotle it is meaningful to distinguish between an epistemology in the narrow sense and a psychology of cognition. Whereas from a strictly epistemological point of view cognition is primarily related to discursive activity and is analyzed by Aristotle within this context, cognition is from a psychological viewpoint a process which Aristotle treats as a physical, and also supra-physical, mechanism. Now in this part of the study we shall investigate what Aristotle adds in the *De anima*, from an epistemological point of view, to what is said about cognition in *Posterior Analytics* II 19.

The *psychology* of cognition constitutes the theme of the third part of this study. Two preparatory chapters deal with sensation and perception, as discussed by Aristotle in the *De anima* and the *Parva Naturalia*. I defend here the view, opposed especially to that of Hamlyn, that the percipient, according to Aristotle, has a passive role in the process of sensation.¹⁶ Sensation in the strict sense does not imply any form of judgement. Thus there is a correspondence between the truth of what is known (the epistemological viewpoint) and the passivity of the person who knows (the psychological viewpoint). Here the distinction we have made shows its fruitfulness. The psychology of cognition explains in its own way what is put forward in the epistemology; the epistemology makes clear the significance of what is presented in the psychology of cognition. One should add that the thesis of the passivity of sensation is not new; but it has by no means received general acceptance.

The question which occupies us most of all, however, is whether the intuitive mind that we meet in the *Posterior Analytics* is explained in greater depth in the *De anima*. In the first part of the study I already maintain that this intuition does not involve abstraction. Abstraction is not only superfluous; it is also impracticable, as Aristotle shows in *Metaphysics* Zeta 11. According to a widely-held view, however, it is precisely the ability to carry out such an abstracting operation that Aristotle ascribes to the human mind or intellective function discussed in *De anima* III 5.¹⁷ Nuyens and Guthrie, on the other hand, do not believe that the mind introduced in that chapter is the human mind.¹⁸ In their view, Aristotle is

thinking of a supra-human mind; for Guthrie this mind is the mind of God, i.e. the First Cause. This is the second important issue in relation to *De anima* III 5. Nevertheless, both scholars do believe that what Aristotle says in *De anima* III 4 points to the necessity of an abstracting operation. The only scholar who resolutely rejects this interpretation is Hamlyn, though without giving arguments for this view.¹⁹ An interpretation which, in reference to *Posterior Analytics* II 19, makes abstraction the foundation of knowledge was already rejected by Le Blond and Von Fritz.²⁰

Now if Aristotle should extend the parallel which he supposes to exist between sensation and intellective intuition to such a degree that the mind is just as passive in the process of knowing as the percipient is in the process of sensation, then the mind introduced in *De anima* III 5 cannot signify an abstracting function of the human mind; it must serve a different purpose. Oehler in fact does not include the mind of *De anima* III 5 in his epistemological analysis of the *De anima*.²¹ Nuyens considers it to be a supra-human mind, as we already said, but is unable to give it a meaningful place within the context of the *De anima*. Guthrie's interpretation, which does not seem to have gained much support either, maintains that it is the divine mind which carries out a kind of abstraction in relation to the thoughts in the human mind.

For the problems envisaged by Nuyens I shall attempt to indicate a solution. I shall agree with Guthrie's view that *De anima* III 5 deals with the mind of God, but on other grounds and from a wholly different epistemological point of view. Before this, however, I shall investigate whether various passages at the end of *De anima* III 4 admit of interpretations different from the ones usually proposed. This is important, for in *De anima* III 5 Aristotle appears to be answering a question arising from these passages. My view is that Aristotle is not referring to abstraction at the end of III 4, but to a quite different kind of prerequisite for intellective cognition. And the interpretation proposed will make it easier to see how, in Aristotle's view, the problem concerning the relation between the human, embodied soul and a pure, immaterial mind can be solved.

By that time we might appear to have drawn away from the theme of intuition and discursive reasoning. But for two reasons it is necessary to discuss completely what Aristotle says in *De anima* III 5; first, in order to refute the interpretation which finds a theory of abstraction there; secondly, in order to show how far Aristotle extends the parallel between sensation and intellective intuition and to make clear how radical his conception of an intuitive mind is.

At the end of part I and part III of this study there are chapters discussing in greater detail the various views which have been put forward in

relation to the main themes of our enquiry. In general, however, the discussion with other interpreters has been relegated to the notes; first, in order not to obscure by too much cross-talk the lines which we believe can be traced in Aristotle's work; secondly, in order to keep the main text free from the Greek words and quotations which are indispensable to a critical debate. On a few occasions this has resulted in excessively long notes.

PART ONE

INTUITION AND DISCURSIVE REASONING IN ARISTOTLE'S LOGICAL WORKS

CHAPTER ONE

SYLLOGISM

Essentially, Aristotle's doctrine of the syllogism is simple.¹ Both in the *Prior Analytics* and in the first chapter of *Topics* I he in fact expounds it rapidly and with conviction. His definition of syllogism reads as follows: "Syllogism is a form of speech (*logos*) in which, after certain things have been assumed, something other than the assumed follows of necessity on account of the assumed".² Syllogism, then, is inference from assumptions; it is an argument based on something that is assumed previously. The necessity of the conclusion lies in the relation existing between that which is assumed and the conclusion. The assumptions entail the necessity of the conclusion.³ In other words: the statement made in the conclusion is already implied in that which was assumed previously.

The aim of drawing up a syllogism is to make clear that its conclusion follows of necessity. For syllogistic reasoning serves to convince another person that the statement made in the conclusion is true. The syllogism functions in a situation where one person is arguing opposite another.⁴ It has its origins in the debate.

The person who draws up the syllogism seeks arguments with which to convince his opponent that a certain proposition is true. This proposition, which will function as the syllogism's conclusion, is therefore starting-point when one constructs the syllogism. The person drawing up the syllogism seeks arguments on which to base this proposition; he does not seek the knowledge contained in the proposition itself. In this respect the syllogism does not yield new knowledge. Nor is that necessary. The only aim in these discussions is to argue previously acquired knowledge opposite another person. The syllogism yields insight into the necessity of adopting a certain position. This position itself is taken by both partners in the discussion as a prior datum which must be argued.⁵

Whoever reasons in the manner indicated attempts to substantiate a given proposition. To that end he resolves this proposition into other propositions and the latter then serve to substantiate the former. The

necessity of the proposition that A is true of each C appears when this proposition is resolved into the propositions that A is true of each B and B is true of each C.⁶ Planets are not near, for, thus may be argued, that which does not glitter is near and planets do not glitter. Briefly formulated the argument reads: planets do not glitter and therefore are not near.⁷ If the last term is simply true of the middle term, and the middle term is simply true of the first term, there is syllogism of the two extremes.⁸ In other words, one argues that the subject C is included in the predicate A by showing that the subject C is included in a predicate B, a predicate that in turn is included as subject in the predicate A. The terms differ, then, in their degree of extension, the area of one term (for example absence of glittering) incorporating that of the other term (for example planets). By adding to two terms, of which it is not clear that the first includes the other *qua* area, a third term which covers an area smaller than that of the last term, but larger than that of the first term, the first term is seen to be included in the last. Aristotle calls the term which is smaller than the middle term the lesser term or minor, the term which is larger than the middle term, the greater term or major.⁹ In this way he emphasizes that the syllogistic or logic just outlined rests entirely upon extension of terms, i.e. upon implication of one term in the other.¹⁰

I have mentioned here only the most perfect and most elementary type of syllogism. In the *Prior Analytics* Aristotle shows us numerous other forms of syllogism.¹¹ In his view, however, these other types go back to the forementioned type.¹² And that is why it can be said in general that Aristotle's logic is *analytics*: a given proposition is analyzed into the propositions upon which it is based. At various places in his works Aristotle in fact uses this term to denote his doctrine of syllogism.¹³

The given proposition which is to form the topic of the argument is the conclusion in the syllogism; the propositions upon which the conclusion is based are the premisses in the syllogism. The person drawing up the syllogism must therefore have the disposal of other propositions besides the one given at the beginning of the argumentation.

CHAPTER TWO

PROPOSITION AND PREMISS

That which we may call the proposition or, in a narrower sense, the premiss, is defined by Aristotle as follows: "The proposition then is a form of speech (*logos*) in which something is affirmed or denied of something".¹ Every proposition can be formulated as a problem. In that case

one asks explicitly whether or not something is true of something else. In the ordinary proposition, on the other hand, a choice is made between two alternatives.² In a debate the following proposition is for instance put by one person to another: "'Living being, with feet, two-footed' is the definition of 'man', is it not?" Formulated as a problem this example would read: "Is 'living being, with feet, two-footed' the definition of 'man', or is it not?"³

The syllogism is composed of propositions.⁴ Whoever wishes to argue a given proposition must therefore have other propositions which will substantiate, in the eyes of the opponent, the proposition given at the beginning of the discussion. After explaining in the *Prior Analytics* what syllogism is, Aristotle indicates how we acquire an ample amount of the propositions needed.⁵ For without that, says Aristotle, one may know how a syllogism works, but one is not capable of making one.⁶

First Aristotle makes a distinction between that which can be said of nothing else in general, and that of which nothing can be said.⁷ The first is that which is individual and perceptible by the senses, for instance Cleon or Callias. The second is the most universal, beyond which no term can be found that is more universal still.⁸ Between the individual subject and the most universal predicate one finds that which in propositions may function as subject as well as predicate. These intermediate terms are also finite in number, according to Aristotle.⁹ In this area between the individual and the most universal an enquiry as a rule takes place.¹⁰

Propositions now are obtained by taking the matter concerned, together with its definitions and individual properties, and subsequently in general all that goes together with this matter and all that it goes together with and all that cannot go together with it.¹¹ Among the determinations of the matter found in this manner, one must distinguish between what is essentially valid of the matter, what strictly individually, and what accidentally.¹² Essential to the matter 'man', for instance, is that he is a living being. The determination 'grammarian' on the other hand, though it can only be applied to man and is therefore strictly peculiar to man, is not essential to man. And the determination 'white', finally, is only accidental to what man essentially is. While reasoning, then, one can draw on this collection of distinctive kinds of determinations.

When one wishes to argue, for instance, that a predicate applies in general to a subject, one must first find out what else can be said of the predicate, and next, what else goes together with the subject. If one finds something of which this predicate is true and which is also true of this subject, then a point of identity has been found between the further

predicates of the subject and the further subjects of the predicate, and the predicate necessarily applies to the subject.¹³ If, for example, one wishes to argue that the predicate 'mortal' is applicable to the subject 'man' and one finds the term 'living being' both among the other predicates of 'man' and among the other subjects of 'mortal', then one has found in 'living being' the middle term which allows a syllogism to be drawn up. In order to obtain a middle term which makes the construction of a syllogism possible, one must therefore seek a point of identity between the subject and the predicate. In that way a means is obtained of showing that the subject is necessarily included in the predicate.¹⁴

Aristotle gives a number of variants of this method; these do not concern us here. In the *Topics* too he indicates that it is necessary to have propositions at one's disposal if a syllogism is to be constructed.¹⁵ And again the central issue is the identity of one thing with another: one must study the multiple meanings of terms and find the differences or, on the contrary, the similarities between one thing and another.¹⁶

Now Aristotle makes an important distinction regarding the nature of the propositions of which the syllogism is composed. On the one hand the aim of drawing up a syllogism may be to convince or refute an opponent with regard to a certain view. In this case the syllogism is dialectical. But on the other hand the aim may be sheer accordance with the truth; then the syllogism is a demonstrative syllogism.¹⁷ In the first case it usually suffices to take propositions that are current or in some other way plausible. But in the second case the syllogism must be constructed by means of propositions which are true simply.¹⁸

In the two cases the syllogism itself, however, is not of a different nature. The dialectical and demonstrative syllogisms are both equally syllogisms.¹⁹ For this reason the *Prior Analytics* as well as the *Topics*, the subject of which is the dialectical syllogism, commence with a definition of the syllogism.

We have now indicated briefly, but sufficiently in view of the aim we have set ourselves, what Aristotle does in the *Prior Analytics* and in *Topics* I. He explains what a syllogism is and under what conditions one is capable of drawing up a syllogism. This he works out and clarifies in larger detail. In *Prior Analytics* II he deals with a number of more complex logical forms; these do not concern us here. For us it is in the first place important to see that the construction of a syllogism is a thing one *does*; it is a technique, a procedure, a working-method, a discursive activity.²⁰ Secondly, we see that the possibility of doing this is subject to a condition: one must have the disposal of propositions regarding the matter of the

argument.²¹ At this final point now the distinction between dialectical and demonstrative syllogism is relevant.

CHAPTER THREE

DIALECTIC AND DEMONSTRATION

Both the dialectical and the demonstrative syllogism require a starting-point. The consequences of the starting-point thereupon constitute the argument. In the discussion this starting-point is put forward as a pair of alternatives. One asks: "does this predicate apply to this subject or not?" (the alternative formulated as a problem); or: "is this a predicate which applies to this subject?" (the alternative formulated as a proposition; the questioner already indicates which of the two alternatives he chooses). The person who poses the question in the discussion puts another person to the choice or puts a proposition to him.¹ In both cases it is up to the other either to make a choice or to accept or reject the proposition put forward. He determines therefore what the person posing the first question may take as starting-point of his argument. But it is the latter who will show the other the consequences of his answer. This procedure is familiar from the dialogues of Plato.²

Aristotle is referring to this procedure when he says in the *Prior Analytics* that the dialectical proposition is formed by asking someone to make a choice between two possible answers.³ Now if one suggests an answer at the same time, so that the other need only reply in the negative or affirmative, then that which one puts forward should not be more than a current opinion or a proposition with established authority.⁴ Sometimes there is another way of making the other accept a proposition as starting-point for argument and discussion: by giving examples one suggests that this proposition holds good always and is valid in all possible cases.⁵ But in all these variants of the dialectical situation the starting-point of the argument must be acceptable to the other person. Prior to every argument, therefore, a question is posed to the other. The argument itself, however, is the ordinary argument, the ordinary syllogism. In this respect the dialectical syllogism is not distinct from the demonstrative syllogism.⁶

With regard to the proposition which is to be the starting-point of the demonstrative syllogism, Aristotle says that we ourselves choose it from the two possibilities offered without appealing to the opponent's judgement.⁷ The judgement of the opponent, the fact that a view is current or has authority, the possibility of making the proposition plausible by ad-

ducing countless examples are of no concern here. When proving we take for our proof a starting-point of which we ourselves determine the truth.⁸ It is this that Aristotle emphasizes: whoever proves does not question; he himself adopts a point of view and explains this starting-point himself.⁹ How this is done Aristotle does not say in this context. He makes it clear, however, that the distinction between dialectical and demonstrative propositions is important. For the former merely agrees with a view of the matter that is current or accepted on authority, whereas the latter is really seen to be true.¹⁰ Here one sees the truth of the proposition oneself. Here the proposition is true and is starting-point of the argument, not on account of other propositions, but because it evokes agreement by virtue of itself.¹¹

Both dialectic and demonstration involve argument. In dialectic the starting-point of the argument is determined in the dialogue. In demonstration a person determines by himself what the starting-point of the argument is to be. He conducts his own search and expounds what he finds to his pupils.¹² The opponent is not involved in the enquiry.

In this last respect demonstrative reasoning differs from the familiar procedure in Plato's dialogues. But in the passages indicated, where Aristotle repeatedly contrasts demonstrative science with dialectic, he does not comment the fact that he is taking quite a different road from the one his teacher, at any rate initially, had taken. Nor does Aristotle show us here how he arrives at the distinction between two kinds of starting-point in argumentation and what significance this distinction has in his work. The distinction between dialectic and proof is already established in the passages indicated and is put forward without any special introduction.

For us it is important to see that the distinction between dialectical and demonstrative syllogism does not lie in the argument; the difference between dialectic and proof must lie elsewhere. We must examine more closely how in dialectic and in demonstrative science successively the starting-points necessary for the argument are acquired or how the first propositions on which the conclusion is based are arrived at.

CHAPTER FOUR

FORMS OF DIALECTIC

In the *Topics* Aristotle devotes a chapter to the distinction between two forms of dialectic.¹ One form of dialectical reasoning is syllogism, the other is induction. In the *Prior Analytics* Aristotle shows that syllogism in

general (so not only the dialectical syllogism) and induction are each other's opposite.² Syllogism argues by means of the middle term that the major term applies to the minor term.³ Induction argues by means of the minor term that the major term applies to the middle term.⁴ In the former case one argues starting from the middle term; in the latter case one argues towards the middle term.⁵ For an argument based on induction is an argument where, starting from readily imaginable examples, one tries to make a general rule plausible.

The distinction between syllogism and induction entails that the situation in which one uses one or the other is different as well.⁶ The syllogism is a full-fledged argument and is therefore effective when one is dealing with somebody who argues competently. Induction, on the other hand, avails itself of sensory examples and convinces above all the person who wishes to visualize what is being argued, because he is less experienced in arguing. Although that which can be visualized is at first more obvious and more appealing, yet syllogism ultimately provides more insight because it argues on the basis of the middle term.⁷

CHAPTER FIVE

THE DIALECTICAL SYLLOGISM

In the *Prior Analytics* Aristotle mentions two types of dialectical syllogism.¹ In the first type the starting-point of the syllogism is acquired by asking another person a question. He is asked to make a choice between two opposite propositions. The questioner then tries to support or refute by argument the proposition chosen or affirmed by the other. In the second type of dialectical syllogism a plausible or else a current view is adopted as starting-point of the syllogism.²

According to the first type, the dialectician wishes to extract information from another person,³ or wishes to inspect another's views by means of argument.⁴ For that reason he must, before he can start to argue, ask the other to put forward a proposition. He asks the other to make a choice within an alternative which he formulates himself.⁵ But when, on the contrary, the other is asked to propose his own definition of something, so that he does not merely have to accept or reject a proposition, the question ceases to be a dialectical question.⁶ In dialectic one is not allowed to ask: "What is man?" One should ask: "Is 'living being, with feet, two-footed' the definition of 'man'?"⁷ Moreover, the question itself must have a certain plausibility. One does not ask a question that is far-fetched or that is self-evident.⁸ The dialectician keeps to the background,

conceals his own preoccupations, and merely suggests a plausible point of view. Once this point of view has been accepted, the dialectician becomes active and shows the consequences entailed by the chosen point of view. By means of argument he tests the position adopted by the other. This inspection may assume the form of a refutation. In that case the dialectician exposes by means of argument the contradiction implied in the position adopted by the other.⁹

According to the second type of dialectical syllogism mentioned in the *Prior Analytics*, the dialectician himself takes as starting-point of the argument a plausible or a current view.¹⁰ Once again, therefore, his own views and insights are relegated to the background. He argues from given points of view. The argument as such, however, does not differ from that of the demonstrative syllogism.¹¹

In the *Topics* Aristotle builds up a collection of the points of view (*topoi*) on which the dialectician can draw. Some of these viewpoints are principles which apply to all sciences, others are restricted to a particular science.¹² These dialectical points of view should not be regarded as commonplaces. They are often principles which are used unthinkingly and which are in this sense obvious and generally accepted.¹³ At the same time it is on these points that misunderstanding, ambiguity, and error easily arise. It is therefore on these points that another person's views must be inspected, so that grounds for refutation may be found.

The dialectician is in the first place dialectician in that he acquires in a certain manner the premisses which he uses in the syllogism: either by means of a question or by adopting a generally accepted point of view. In the second place he is dialectician by virtue of his skill at arguing with others. He is adept in discussion and capable of employing its tactics.

With regard to the former aspect, there is to some extent no difference between the dialectician and the person who argues demonstratively, i.e. the philosopher. For the latter must also start by finding points of view on which to base his argument.¹⁴ But the philosopher is only interested in whether these premisses are true and evident.¹⁵ The dialectician's concern is above all whether an opponent will or will not accept the given points of view. He sets out to present them in such a way and to ask the other certain questions in such a manner that the latter will not immediately foresee the possibly unfavourable consequences which acceptance of them might entail for him.¹⁶ Having provided in the preceding books a survey of various possible viewpoints, Aristotle deals in the final book of the *Topics* with the tactics of the discussion.¹⁷

The skill of the dialectician reaches even further, however. For he also knows the viewpoints that determine every argument in whatever field,

namely the principles of logic.¹⁸ Whereas in relation to particular subjects he is only capable of putting forward current points of view,¹⁹ his particular skill lies in the domain of the general principles of argumentation that are applied in all sciences alike.²⁰ He is skilled in syllogism generally²¹ and in such matters as opposition and relation, which also recur in every particular science.²²

On the one hand, therefore, dialectic is concerned with everything, for every argument and every science makes use of general logical principles or axioms.²³ On the other hand it is not concerned with any particular subject²⁴ and deals with discourse in general instead of with one matter or another.²⁵ When the dialectician argues, the subject with which the argument deals must be given to him. Inevitably, this is a proposition put forward by someone else or a current opinion.²⁶ In short, the particular field in which he is skilled seems to be analytics, including the strategy of argumentation and matters such as opposition and relation. For this reason dialectic may be called a formal science, for it is not particularly concerned with the content of knowledge. And that is precisely why the dialectician can apply his technique to any subject whatsoever.²⁷

In *Metaphysics* Gamma now concepts are discussed which, after what has been said above, we would call dialectical concepts: the same and the similar and such-like; oppositions such as unity and plurality, the one and the various, the dissimilar or the unequal; oppositeness once again.²⁸ All these subjects should be related to unity, or plurality, its opposite.²⁹ Unity now is indissolubly joined to being: the one (the individual) is that which is and that which is is always one.³⁰ And the attributes belonging to unity also belong to being.³¹

Aristotle continues, however, by saying that the attributes belonging to being as being are studied by the philosopher.³² They are also, it is true, the subject of dialectic, but not in the same way: where dialectic tests or inspects, philosophy expounds.³³ Therefore a different treatment of the same subject seems to be possible. Both disciplines, therefore, deal with everything; for being is common to all things.³⁴

Being as being, then, is the object of philosophy, i.e. of a positive, expository, demonstrative science. This science also deals with entity, however.³⁵ It is therefore the same science that considers entity and the attributes of being as being.³⁶ The attributes of being as being are the principles of a certain nature, says Aristotle,³⁷ as entity is a certain nature. Hence the science of logic would also seem to have a certain nature as its object, albeit a nature that is not a part of anything else.³⁸ We have just seen, on the other hand, that dialectic is not concerned with one matter or another. Thus Aristotle seems to be contradicting himself.³⁹

It appears in two ways, however, that these passages do not reflect Aristotle's final views. Firstly, he does not elsewhere assign entity on the one hand, and being as being on the other, as subjects to the same science. The attributes of being as being are therefore *not* related to a particular nature and the discipline which considers them cannot be an ordinary discipline. Secondly, it is elsewhere Aristotle's view that the most important logical principle, namely the law of contradiction, cannot be proved. Therefore this principle cannot be the object of philosophical exposition.

Whether entity and the common principles of being (these are at the same time the general principles of syllogism)⁴⁰ fall under the same science, is a question which Aristotle raises twice in the third book (Beta) of the *Metaphysics*.⁴¹ In his discussion of this problem he shows why it is implausible that both subjects should fall under the same science: each science makes use of the common principles and each knows them, even without having studied them especially;⁴² but the same does not apply to entity. On the other hand one might argue, says Aristotle, that these principles, though not falling with entity under the same science, are the most general principles, so that it must be the philosopher's job to consider them.⁴³ At the same time Aristotle believes, however, that the common principles cannot be proved.⁴⁴ Hence they cannot fall under the highest science either, i.e. philosophy. For the latter is an expository, demonstrative, and didactic science.⁴⁵ Therefore the common principles and entity cannot simply fall under the same science. Yet Aristotle states here that the common principles must be the object of philosophy.

This ambiguity has vanished in the chapter immediately following those from *Metaphysics* Gamma which we have just discussed. Of the principle of contradiction no proof is possible, Aristotle states here unambiguously. One can only try to refute whoever denies the principle.⁴⁶ The principle common to all sciences, then, cannot be an object of philosophy; it is the object of dialectic only, which tests it. Each demonstrative science deals with a certain area of being; only dialectic deals with nothing in particular.⁴⁷ The common principles are related to being as being, i.e. to that which is most universal, which from now on is sharply distinguished from entity by Aristotle.⁴⁸

In the *Topics* Aristotle indicates that dialectic has three uses.⁴⁹ First, it exercises the ability to reason and to discuss any kind of subject.⁵⁰ Next dialectic is useful in conversations with the ordinary run of people. Aware of current views, one can discuss matters with everybody on the basis of their views and, if necessary, correct them.⁵¹ In the third place dialectic is useful in relation to philosophy. By being able to discuss both

sides of a controversy, one discovers more easily what is true and what is untrue.⁵² Book Beta of the *Metaphysics* is in its entirety an example of this dialectical preparation for true philosophical science: of each question two or more opposite answers are argued. Furthermore, dialectic is useful in relation to philosophy in that it allows some exposition with regard to the first principles of each branch of philosophical or demonstrative science.⁵³ Because the highest principles of a science are concerned, the science itself cannot say anything about them. In that case dialectic is the only method which can still be used. Enquiry into the first principles is the dialectician's task *par excellence*, according to Aristotle.⁵⁴ Many examples of this are found in Aristotle's own work. Again and again a dialectical enquiry precedes the philosophical definition or analysis proper.⁵⁵ One should add that dialectic does not *prove* the first principles in the course of this procedure. For it is always the highest principles of some branch of demonstrative science that are concerned, so that there are no principles on the basis of which they can be proved. Starting from what are merely current opinions and plausible points of view, dialectic gives some exposition of these principles.⁵⁶ The first book of the *Metaphysics* and the first book of the *De anima* are, each almost in its entirety, illustrative of this method.

CHAPTER SIX

INDUCTION

The second form of dialectic mentioned by Aristotle in the *Topics* is induction.¹ Induction is a method of arriving at the general rule by starting from particular cases.² Aristotle gives an example: if the skilled helmsman is the best and likewise the skilled charioteer, then in general whoever is skilled in a matter is best.³

The induction is an argument.⁴ It is, however, no ordinary argument. For that reason Aristotle regards it as another type of dialectical argument along with the dialectical syllogism. The dialectical syllogism is an ordinary syllogism.⁵ In it the particular is subsumed under the general and the argument depends on the general rule.⁶ That this syllogism is dialectical means only that the general rule, instead of being truth perceived by oneself, is merely a proposition accepted by another, or a current point of view, or a view held by an authority. In the inductive argument, on the other hand, it is the general rule which is supported and which does not, therefore, form the corner-stone of the argument. By indicating the similarity between particular cases, the general rule is

capable of being put forward with some probability (see the example above).⁷

In the section of the *Topics* dealing with dialectical method, Aristotle shows when it is necessary to argue inductively.⁸ If an opponent does not accept a certain proposition and it is thus impossible to argue another proposition on the basis of this first proposition by means of a (dialectical) syllogism, the general rule (the second proposition which cannot be argued syllogistically) can be made acceptable to him by showing that this proposition is valid in particular cases.⁹ At the same time the applications of a general proposition may also be adduced merely in order to embellish an argument.¹⁰

If a large number of cases has been adduced in which the general proposition holds good and yet the opponent refuses to accept the general proposition, then one is justified in asking the other to make his objection known.¹¹ He must then put forward another case in which the general proposition does not hold good.¹² If he fails to produce an objection, however, the proposition which has been made plausible by means of its applications may be considered accepted. For a dialectical proposition requires only *de facto* acceptance by the other and absence of objections.¹³

In the *Prior Analytics* Aristotle devotes a separate chapter to induction.¹⁴ His aim in this chapter is to show that induction carries conviction only because it too is based on one of the logical forms dealt with in the *Prior Analytics*. Therefore induction must be a kind of syllogism. In fact, Aristotle calls it here 'syllogism based on induction'.¹⁵ But Aristotle also says that one becomes convinced of something, whatever it may be, either by syllogism or by induction.¹⁶ Therefore induction cannot be an ordinary syllogism; it stands alongside of the syllogism as the other possible form of argument.

In inductive argument one argues for instance that A, a long life, goes together with B, the absence of a gall, by showing that C, the long-lived, individual species (man, horse, mule), goes together with B, the absence of a gall.¹⁷ By showing that the middle term B applies to the minor term C, one argues therefore that the major term A applies to the middle term B.¹⁸ The validity of this method is subject to a prior condition. C and B must be convertible; the long-lived animals must also be the animals without galls, and vice versa.¹⁹ It is above all important that C is not wider than B, that is to say, that no animal, though possessing a gall, is long-lived.²⁰ If one wishes to challenge the inductive argument in question, one must of course try to find an animal of the latter kind. If one is found, the argument is promptly deprived of its validity.²¹ For the induction holds good only if any long-lived species whatsoever may be ad-

duced as evidence. The minor term C must include all cases.²² In short, in terms of the example, if each animal that lives long appears to lack a gall, then this is likely to be the cause of its long life.

With this the middle term B (an animal without a gall lives long) has been demonstrated. If the opponent accepts the middle term thus argued, it can be used as a starting-point for further argument. On the basis of this middle term the ordinary syllogism can now also be constructed: 'this individual species has no gall and is therefore long-lived'. Induction is in a certain sense the same form in reverse.²³ For the syllogism demonstrates that the major applies to the minor on account of the middle term, whereas induction shows that on account of the minor the major applies to the middle term. Yet induction is a valid logical procedure, as long as minor and middle term are convertible.²⁴

The question is whether one actually succeeds in adducing all possible cases of the general rule. In the meantime the opponent tries to find a case that should fall under this rule, but in fact deviates from it. In the inductive procedure, however, it is not actually necessary to adduce all possible cases. At a certain point one says 'etcetera'²⁵ and waits for the other to advance an objection.²⁶ Aristotle in fact says that one should merely imagine the minor C as being comprised of all cases of the general rule.²⁷ He does not seem to have meant that one must actually enumerate all cases, as if that were possible.²⁸ The idea is only that all possible cases of the general rule must in fact be capable of featuring as such.²⁹ The mutual convertibility of minor and middle term remains hypothetical in this context. And this is the reason why on the one hand induction is a syllogism, but on the other hand is no ordinary syllogism. Induction approaches syllogism without ever achieving it. But as long as it approaches syllogism, its argument has a certain plausibility. If a valid objection is put forward, however, the inconvertibility of minor and middle term has been made apparent and the inductive argument promptly loses all its plausibility.³⁰

It is quite otherwise with that which Aristotle calls 'example'.³¹ One gives an example of a general rule in order to suggest to an opponent, by means of this example, the plausibility of a general rule.³² But immediately after one applies the general rule to something else which resembles the example given.³³ In other words, a syllogism is drawn up. Actually one does not so much lend plausibility to the general rule as show that what resembles the general rule may in fact be considered a case of the general rule. Insofar as the argument is based on an example, therefore, it is merely an argument from the particular to the particular.³⁴ One says for instance: "It is wicked of the Athenians to wage

war against their neighbours the Thebans, for it also wicked of the Thebans to wage war against the Phocians, and these are also neighbours''. The case of the Athenians is illustrated by means of the example of the Thebans; but that it is wicked in general to wage war against one's neighbours has not herewith been demonstrated. In the inductive argument, on the other hand, one argues from the particular to the universal and leaves drawing up a syllogism until the opponent has assented to the general rule.³⁵

Induction is a form of dialectical reasoning.³⁶ Induction is dialectical first of all because the inductive argument is not an ordinary argument; it is a syllogism which is not entirely conclusive.³⁷ The opponent must be content to accept what is plausible. In the second place, induction is a dialectical method in that it only shows something to be the case, without making clear why this is so.³⁸ It makes it seem plausible that the major applies to the middle term; it does not explain the reason. In contrast, the scientific, demonstrative argument is required to give insight. And it does this by explaining the reason for something.³⁹

Induction is useful, for it allows something to be argued opposite another person when an ordinary (dialectical or demonstrative) argument is no longer capable of doing so. And this is the case whenever one wishes to convince an opponent of the truth of a first or highest proposition which itself is no longer subsumable under a prior or higher middle term.⁴⁰ It may also be, however, that one is quite capable of arguing the middle term by means of a syllogism, but that the other can be more readily convinced by means of an inductive argument.⁴¹ And in general, according to Aristotle, induction has greater powers of persuasion opposite the ordinary run of people, and especially opposite young and inexperienced people, whereas syllogism, though in itself more productive of insight, is more powerful opposite those skilled and experienced at arguing.⁴² Finally, induction can also be of assistance at the start of an enquiry, when it is yet to be determined which principles may serve as starting-point of the proof. Like dialectical enquiry, therefore, induction has propaedeutic value with regard to demonstrative science.⁴³ By means of induction, science which is still in its first stages is able to provide its starting-points with some argumentation.

In each case, however, the general rule or the middle term argued inductively is a prior datum.⁴⁴ In inductive argument one already has the proposition that is to be made plausible. Thus it is not the function of induction to lead to the discovery of a general rule. It does not produce new knowledge. It functions where argument by means of syllogism is not possible or not opportune and makes a form of exposition and argumentation possible after all.⁴⁵

Syllogism and induction are, according to Aristotle, the only forms of argumentation that exist.⁴⁶ And every argument is based on or supported by knowledge which is already present and exists prior to the argument.⁴⁷ Inductive argument points to the particular case which one observes. Dialectical argument refers to the current or authoritative opinion or to the proposition that has been accepted by the opponent as starting-point of the argument. With induction that which is previously known and acknowledged is the particular; in dialectical argument this is the universal. The particular is known through sense perception. The universal is derived by the dialectician from existing views that are current or authoritative, or else the universal is conceded to him by the opponent with whom he is arguing.⁴⁸

Now what is the situation in this regard when one is enquiring for oneself and one does not wish to construct on what is plausible and be satisfied with only potentially conclusive arguments?⁴⁹ How is demonstrative science distinct from dialectic in this respect? The person who knows in the scientific sense sees the truth of what he puts forward himself and does not derive his initial propositions from others. Nor does he find his starting-points by means of induction. For induction is not a method of discovering general propositions. It only serves to convince an opponent that the general proposition already at one's disposal is plausible. Moreover, it does this in a dialectical manner, by means of an argument that is not entirely conclusive. This is a second reason why it cannot be induction that provides demonstrative science with its basis and starting-point.

CHAPTER SEVEN

THE DEMONSTRATIVE SYLLOGISM

The demonstrative syllogism is distinct from the dialectical syllogism. The distinction does not lie in the manner in which both are argued. The demonstrative and the dialectical syllogisms are both equally syllogisms.¹ The distinguishing characteristic of the demonstrative syllogism lies in the nature of the premisses of demonstrative reasoning.²

In book I of the *Posterior Analytics* Aristotle explains what these premisses are characterized by. In this way he at once makes clear how demonstrative reasoning differs from dialectic.

Demonstrative science starts from true propositions, i.e. from propositions based on knowledge of the matter itself.³ In demonstration these propositions are put forward because the matter concerned requires it,

not because it is convenient in the discussion.⁴ They are basic propositions, for the proof is based on them.⁵ Of these propositions themselves, however, there is no proof, nor is there a higher middle term which can make such a proof possible.⁶ Yet there is more insight with regard to these propositions than there is with regard to what proceeds from them, for the second insight is inferred from the first.⁷ These propositions precede the conclusion and indicate the cause of what the conclusion says.⁸ The basic propositions of the demonstrative argument belong to that which they demonstrate; they are principles proper to that which is being argued.⁹ The person who is being instructed in a certain matter need not know these principles. In this respect they differ from so-called axioms, i.e. the principles common to all sciences. These must already be known to the person who is being instructed in some matter, whatever it may be.¹⁰ The undemonstrated proposition upon which the demonstrative argument is based is a thesis, a proposition put forward by the instructor. With it the latter does not merely provide a hypothesis. For the hypothesis is the dialectical form of the thesis, in which something is affirmed or denied according to whether a probable view or the trend of discussion requires it.¹¹ In a scientific exposition, on the other hand, one starts with a definition. One constructs upon an insight into the matter itself.¹² The definition is the type of thesis which serves as starting-point of the proof.

The matter which is the object of demonstrative science cannot possibly be other than it is. The object of science is that which is necessary, that which must be as it is.¹³ Therefore the proof proceeding from the matter itself must be a syllogism that finds its starting-point in necessary principles.¹⁴ These principles make clear what goes together necessarily with this matter. They indicate what is true of each matter of a certain kind in virtue of the matter itself and in general.¹⁵ For the principles are in the definition what the constitutive elements are in the object of definition.¹⁶ And the object of definition is the essence of a certain kind of thing.¹⁷ From 'triangle', for instance, it follows by virtue of the essence of the triangle that the sum of its angles is 180 degrees. This is true of any particular triangle whatsoever. Thus the person objecting to this principle from the definition need only indicate one particular triangle that deviates from the given principle. The necessity of the principle has then been disproved.¹⁸

The principle must therefore be generally valid. As Aristotle states repeatedly, this means validity of each particular case of the matter concerned, validity in virtue of the matter itself and validity of the matter as such, i.e. in virtue of its essence.¹⁹ The principle is generally valid if it is applicable to each manifestation of the matter; it is basic to all these

manifestations.²⁰ All else pertaining to these manifestations is accidental and is not considered by the definition.²¹

The principles proceed from the essence of a certain matter. That is why they have necessity and that is why the demonstrative syllogism starts from necessary principles.²² These principles are therefore not merely valid because they are true.²³ In demonstrative argumentation it is not possible to hold that the principles in fact apply to the matter without also seeing that they are valid in virtue of the essence of the matter and hence with necessity. In dialectical argumentation, on the other hand, true and relevant principles may perhaps be stated, but the necessity of these principles is not seen.

The principles constitute the essence of a certain matter and are therefore called the special principles of this matter. The dialectician often puts forward other principles: the principles common to all sciences. These latter principles are true, but do not indicate what is basic to the specific subject-matter with which demonstrative science is always concerned.²⁴ The special principles of a certain matter, however, cannot, as principles of one field of science, be applied to the subject-matter from another field of science, unless one of the sciences is a subdivision of the other.²⁵ If for all that someone uses the same principle in different sciences, his arguments can only deal with something accidental.²⁶

The principles must therefore not only be true, undemonstrated, and lacking a higher middle term, they must also belong to the subject-matter concerned. This is at the same time the reason why these principles particular to a certain science cannot be demonstrated.²⁷ Proof would imply that there are even higher principles than the highest of a certain science. These principles would then be the principles of everything and the science which demonstrates on the basis of these principles would stand above all particular sciences.²⁸ Aristotle states, however, that each demonstrative science covers a specific field.²⁹

Thus Aristotle rejects the idea of an all-embracing demonstrative science. Only dialectic embraces all sciences.³⁰ Dialectic, however, does not furnish proofs and it is not a science. For it does not take its starting-point in the essence of the matter. Aristotle makes a sharp distinction between science and dialectic. In Plato's view, on the other hand, dialectic is the highest science, since it touches upon the causes explaining all that is.³¹ Aristotle now allows the dialectic its inclusive character, but denies it the ability to explain that which is in terms of its essential causes. In Aristotle dialectic becomes general propaedeutics. Being is divided into a number of separate areas, each with its own first principles and each studied by a particular science. No science is possible of being as being, i.e. of being regarded quite generally and not as essence or entity.³² The

attributes of being as such are studied by dialectic.³³ Nor is being as being the highest that is, for all that is, each individual being, is a being, regardless of its status.³⁴ If there is a highest science, therefore, it cannot be the highest by including all other sciences. A science is possibly the highest science on account of the nature of the particular kind of being which it considers: the immaterial or the supernatural.³⁵ Instead of ontology, therefore, it is theology.³⁶

Demonstrative science has its starting-point in undemonstrated principles.³⁷ In order to prove one must have these principles at one's disposal. They must be known previously, as the particular case must be known previously in inductive argument.³⁸ Without the existence and the knowledge of these first and undemonstrated principles no proof would be possible at all. For in that case one would have to prove each principle from higher principles *ad infinitum*. In reality, however, one cannot pass through infinity, so that neither a fixed point nor necessity are ever reached. Proof assumes a first principle, therefore, a principle without higher middle term.³⁹ If proof is required of this principle too, there is no longer proof of anything.⁴⁰ Nor can one say that proof of everything might be possible by means of a circular argument or by proving the principles from each other. For the middle term which one wishes to prove here is a *first* principle and cannot therefore be at the same time a lower principle, i.e. one based on a higher middle term.⁴¹

The distinction between proof and dialectic lies, as we have seen, in the nature of their premisses. The premisses of dialectic and of inductive argument lack necessity. In dialectical argument the principles are not stated in virtue of the matter itself. Demonstrative principles are implied in the essence of the matter. For that reason these principles are valid of necessity and also, therefore, generally.

The dialectician adopts his premisses from the answer given by his opponent, or from plausible or current views. Inductive argument ultimately proceeds from sense perception. But how does one obtain one's premisses in demonstrative argument? How does one come to know the first principles or the essence of the matter concerned? The way in which this is done must be specific to demonstrative science. It must justify the fact that the proof has necessity and argues on the basis of necessary principles. Precisely in the way it acquires its first principles, demonstrative science must be distinct from dialectic.⁴²

In book one of the *Posterior Analytics* Aristotle comments only sparingly on this matter. He seems to be saying that demonstration is not the only form of science⁴³ and he states that, besides science, there must also be

a starting-point of science.⁴⁴ As starting-point of science he mentions now the definition,⁴⁵ now the mind.⁴⁶ In book II of the *Posterior Analytics* Aristotle addresses this question at greater length.

CHAPTER EIGHT

DEFINITION

The question as to the starting-point of science is only summarily answered in book I of the *Posterior Analytics*. Sometimes Aristotle refers to the definition, other times to the mind; often he merely observes that another kind of knowledge is required.¹ Thus it is not yet clear in book I on what basis the distinction between dialectic and demonstrative science rests.

On the other hand, one of the two solutions indicated to the problem, the definition, constitutes the main theme of *Posterior Analytics* II. But the actual discussion of the definition is preceded by a chapter which is not clearly connected with the following chapters.²

In this chapter Aristotle distinguishes two kinds of enquiry. Questions to which answers can be sought are either compound or simple.³ In the first case one enquires whether something is true of something else and, if so, why. One enquires for instance whether the sun is eclipsed and what this is caused by. This produces a compound question, for the problem is whether something, eclipse, applies to something else, the sun. In other words, one asks whether or not a predicate applies to a (logical) subject.

In the second case one enquires whether something exists and, if so, what it is. One wishes to know for instance whether centaurs exist or whether God exists; and one asks for instance what 'God' is and what 'man' is.⁴ The question one is asking is simple, for its object is a single term (centaur, God, man). In other words, instead of asking whether a predicate may be applied to a subject, one asks here what attributes belong to a substance.⁵ This substance or entity is not the logical subject of its attributes. For whereas a logical subject is qualified by its predicates and is therefore entirely distinct from those predicates, the substance coincides with its essential attributes and both must be interchangeable.⁶

The simple question has as its object substance, entity, essence as such, and asks what this is. It becomes obvious that Aristotle herewith introduces the problem of the definition when we place the distinction between compound and simple questions from *Posterior Analytics* I 1 against the background of what he says on this subject at *Metaphysics* Zeta 17.

There Aristotle puts it somewhat differently: the person who searches for the why of something is always enquiring why something applies to something else; but the person who wishes to know why a thing in itself is itself is not in search of anything. For in the latter case the object of enquiry is already known to him as a thing that exists and he does not ask whether some or other predicate applies to it.⁷ That which is being asked is in fact least clear in propositions where nothing is stated of anything else, as when one asks: “what is ‘man’?”.⁸ In such a simple question the essence of something is sought. And slightly further on Aristotle states: with regard to that which is simple neither instruction nor enquiry is possible; the manner in which it is sought must be different.⁹ Now if it is a simple question in which the essence is sought and if it is the definition in which the essence is stated,¹⁰ then it appears to be the definition which is either not a form of instruction or enquiry, or which represents a different kind of search. It is this complex of problems that Aristotle introduces in the first chapter of *Posterior Analytics* II.

If all the same one wishes to conduct a discursive enquiry into the essence of a thing, then the simple question regarding the essence must be changed into a compound question, says Aristotle in *Metaphysics* Zeta 17.¹¹ Instead of asking the question “what is man”, one asks why such and such a body is ‘man’.¹² In this way one acquires a subject and a predicate, so that next it is possible to ask what causes the predicate to apply to the subject. One tries to find out, therefore, what causes the matter to be a thing of a certain nature.¹³ Once this cause has been found, a syllogism can be drawn up. One could say for instance: this body has an intellect and is therefore human. The definition sought after can be read from the syllogism: ‘man’ is a (living) body possessing intellect.

In *Posterior Analytics* II 8 Aristotle gives other examples of enquiry into the essence of a thing.¹⁴ If one wishes to know what an eclipse (of the moon) is, one must ask what causes the moon to be dark. If the cause is found, namely the interposition of the earth (between the sun and the moon), a syllogism can be drawn up. This syllogism, ‘the moon is subject to interposition of the earth and is therefore eclipsed’, thus indicates at the same time the definition of ‘eclipse’ (of the moon): ‘interposition of the earth in relation to the moon’. The pattern of the syllogism and of the definition in this example corresponds to that in the example at *Metaphysics* Zeta 17. And just prior to giving the example of the eclipse Aristotle subjects this method to a condition, taking the essence of man as one of his examples. One must, says Aristotle, already know something about the thing concerned, for instance of the eclipse that it is a certain privation of light, or of man that he is a certain kind of living being.¹⁵

One must know under what genus the matter falls, roughly speaking, so that next one can ask what makes this genus be this specific thing or what makes this matter be of such and such a nature. The important point here is to find the cause and the essence of the thing, and not some or other side-effect, such as the absence of shadow owing to the privation of light.¹⁶ In *Posterior Analytics* II 13 Aristotle indicates how one proceeds to accomplish this.

In a certain sense, then, says Aristotle, there is a syllogism of the essence after all. The syllogism or the proof makes apparent what the essence is. *That* this is the essence, however, is not proved; the proof only indicates what the essence is and in the meantime proves something else.¹⁷ The syllogism proves that such and such a living being is man by showing the cause. But by showing this cause, the proof also reveals what the most important element is in the definition of 'man', besides 'living being'. Demonstrative argumentation with regard to the essence does not appear to be possible in this way.¹⁸ A certain form of exposition, however, is possible.

We have seen that Aristotle attaches a condition to this form of exposition with regard to the essence of a thing: one must already know something about the thing of which one is seeking the essence. Moreover, says Aristotle in *Posterior Analytics* II 8 and 9, this form of exposition with regard to the essence is only possible if the cause of the essence does not coincide with the essence.¹⁹ The essence must not be a first or highest principle and must have a (higher) middle term. The eclipse (of the moon), for instance, is caused by the interposition of the earth, so that this phenomenon pertains to the moon on account of something else. The moon is here a substratum which acquires a certain property under the influence of an external factor. Insofar as this property is precisely one belonging to the moon, one can only indicate what this property is, its essence, by referring to a cause external to this property and this essence. In a comparable way, according to what must be Aristotle's intention in *Metaphysics* Zeta 17, humanness pertains to a certain body because something other than the body, the (human) soul, makes it a human body.²⁰ Therefore humanness, insofar as humanness is bound up with the body, has its cause outside itself. In this case too, therefore, it is possible to read the definition from the syllogism. In the *Posterior Analytics* Aristotle does not work out a similar example. We have seen, however, that in the *Posterior Analytics* II 8 he does mention 'what man is' and 'what eclipse is' in the same breath, so that we may assume that all that is subsequently stated with regard to the eclipse may also be stated with regard to man.

If in fact exposition is possible both with regard to the essence of properties such as 'eclipse' and with regard to the essence of a substance such

as 'man', because in both cases the cause of the essence is distinct from the essence, then it is hard to see what Aristotle can mean when he speaks of the case where the essence does *not* have its cause outside itself. He only mentions that something without a middle term is concerned, a principle, and that it must be presupposed or explained in some other way, just as the arithmetician presupposes the unit.²¹

A passage from *Metaphysics* Eta 3 offers a clue to the solution of this difficulty.²² Aristotle refers there to a view from the school of Antisthenes and states that there is definition of the essence insofar as it is compound. Of the constitutive and elementary parts themselves, however, no definition is possible. For the definition indicates that a certain form applies to a certain matter, which it cannot do in the case of a constitutive element. The compound essence, therefore, admits of definition. In contrast, the essence, now conceived of as an indivisible form, as the species which gives a thing its specific character, cannot be defined. The essence taken in this sense is a constitutive part in each definition.²³

With regard to the essence, therefore, taken in a certain sense, a certain discursive method and exposition is possible after all, if no syllogism or proof. Taken in a different sense, as indivisible species or elementary principle, the essence remains inaccessible even to this form of exposition. Here a simple question concerning the essence cannot be changed into a compound question. In what way one does have knowledge of these principles is a question which Aristotle, arriving at *Posterior Analytics* II 9, has not yet answered.²⁴

In the chapters preceding *Posterior Analytics* II 8 and 9 Aristotle shows at length in what way the definition differs from the syllogism and the proof.²⁵ The definitions are the starting-points or the principles of the proofs. They themselves are undemonstrated, or one would have to be able to prove them by means of the principles of these principles and so forth *ad infinitum*.²⁶ But this would make proof impossible, for in reality one cannot go on indefinitely.²⁷ If the definition is seen as the predicate of the *definiendum* and one wishes to prove by means of a middle term that this predicate applies to the *definiendum*, then one must in turn assume that the middle term supplies the definition. In this way one merely disguises the fact that a circular argument is taking place.²⁸

Nor can the definition be proved by means of the method of division. This method shows something perhaps, but, like induction, it does not furnish proof.²⁹ If for instance one finds by means of division that man is a living being, mortal, with feet, two-footed, wingless, then it is not clear why precisely these attributes are chosen each time from all the possible attributes, or why it is in this way that a certain attribute must

be divided into two (for instance, that an animal is either mortal or immortal, instead of either or not endowed with sense). One does not therefore furnish proof of the fact that man must be placed precisely in this subdivision and not in another.³⁰ Moreover, it is entirely uncertain whether or not one is adding or omitting or overlooking anything with regard to the essence.³¹ Finally, it is not only not proved that all these characteristics belong to the essence, but it is also unclear why or in which way they form a unity, why for instance man is a living being with feet, instead of a being that happens to be living and also happens to have feet, just as somebody can be musician and grammarian at the same time.³²

Aristotle, then, poses *two problems* regarding the definition of the essence. How is it clear, if not by syllogism, firstly, that the terms from the definition indicate the essence, secondly, that these terms form a complete and essential unity?³³

The definition is not a proof and cannot be proved. Nor does division produce a definition that can be called 'proof', for this method is not demonstrative. Induction, finally, does not demonstrate the essence either. For induction merely shows that this or that is the case and does not demonstrate conclusively that something generally has certain characteristics.³⁴ And after this exposition Aristotle asks once again in *Posterior Analytics* II 7 in what way the definition *does* make something clear. For besides syllogism and induction there are no other forms of argumentation.³⁵

In *Posterior Analytics* II 7 Aristotle points out yet a *third problem* in connection with the definition. It is not possible, he states, to show the essence of anything at all, if one does not know that it exists. Of a completely imaginary thing one can only indicate what its name means; what kind of thing it really is must remain obscure.³⁶ If, then, the definition shows the essence of something, does it also show that it is the essence of a thing that exists?³⁷ In fact, says Aristotle, mathematicians only *assume* that the object of their demonstrations exists, so that the definition which they start from states no more than the meaning of a name or term.³⁸ But this is absurd, according to Aristotle, for in this way there would be definition of something of which it is not clear that it exists, so that the definition could also have an object which is perhaps not an entity. Moreover, each formulation attached to a name could in that case be called a definition. And finally this would mean that the definition is as incapable as the proof of showing why (on the basis of what characteristics) a name belongs to some really existing thing.³⁹ But Aristotle does not show in *Posterior Analytics* II 7 how these consequences can be avoided.

Aristotle has now sealed off the definition from certain forms of argumentation and pseudo-argumentation (the method of division) and, in passing, has formulated three problems with regard to the definition: that of the essential character of the terms used; that of the unity of the definition; that of the question whether the definition answers to a reality. The tentative conclusion which Aristotle reaches in *Posterior Analytics* II 7 does not produce a positive result; definition and syllogism are not the same and do not have the same object; the definition does not prove or make anything clear; the essence of a thing is known neither by definition nor by proof.⁴⁰ The essence is not known by definition either, for, as we have just seen, the definition merely postulates and does not determine whether the *definiendum* exists. As such, therefore, it fails equally to get at what a certain real substance is.

Aristotle now possesses a theory of syllogism and he has discussed certain forms of argumentation related to the syllogism. He has come to the conclusion that the syllogism needs a starting-point; in the case of the demonstrative syllogism this starting-point is the definition. But this first enquiry has not been able to make clear in what way the definition supplies demonstrative science with the starting-point without which it cannot exist. A new enquiry is necessary.⁴¹

In the discussion of *Posterior Analytics* II 8 and 9 we have seen the results of this new enquiry. Under certain circumstances an exposition with regard to the essence of a thing is possible, so that to a certain extent one is able to apply a method in order to reach a definition. But how we possess knowledge of the elementary, constitutive parts of the definition is a question that has remained unanswered. One must presuppose the principle-without-middle-term, as arithmeticians do, or make it clear in some other way, says Aristotle in *Posterior Analytics* II 9.⁴² The manner in which he formulates this betrays that he is still puzzled by the way in which we know these principles. In *Posterior Analytics* II 10, which summarizes the enquiry into the definition, Aristotle puts it like this: the definition of that which has no middle term is an undemonstrated assumption of what something is. But on the basis of the preceding chapters we can say that Aristotle is unlikely to be satisfied with this conclusion.⁴³ Rather he seems to hold the view that the usual method of the mathematician, who postulates before setting out to prove and who assumes the existence of the postulate, is either of no use in the demonstrative science with which Aristotle is concerned, because in fact it produces no more than nominal definitions, or requires prior cognition. By virtue of its contact with reality, this cognition preceding the definition would have to supply the definition with the elements of which

it is composed. That would make clear that the definition too is concerned with reality and has substance as its object.⁴⁴

Aristotle, however, does not give this solution here, nor does he state that the enquiry into the definition ends in an aporia. Two other problems remain equally unsolved, namely that of the essential character of the definition's parts and that of the unity of the definition. The most important result of his enquiry into the definition is that it confirms the radical distinction between definition on the one hand and syllogism on the other. And there is a direct link between this and the thesis of the unproved and unprovable character of the starting-point of the demonstrative syllogism. As he works out the implications of a severe, discursive, and deductive science, Aristotle is forced more and more to assume that the starting-points which such a science needs cannot be acquired discursively.⁴⁵

In the other chapters of *Posterior Analytics* II the enquiry into the definition is not carried on directly. In connection with his view that what the middle term is in the sphere of logic, the cause is in the sphere of reality, Aristotle discusses in detail a number of problems regarding causation.⁴⁶ We have seen how he relates in a comparable fashion the structure of the definition to the composition of matter and form in the entity under definition.⁴⁷ The close connection which according to Aristotle exists between logic and reality is a theme in itself. We do not pursue it here.

It is not until the last chapter of *Posterior Analytics* II that Aristotle returns to the question of how the principles of science are known.⁴⁸ But the definition is no longer mentioned in this context. Only *Posterior Analytics* II 13 links up in some degree with what has gone before.

Aristotle formulates the following problem here: how do we discover that which is stated of the essence?⁴⁹ The exposition which he proceeds to give is assertive and confident, in contrast with the earlier one.

Now some of the attributes which are always connected with a certain thing have a larger extension than this thing, but without extending beyond the genus to which the thing belongs. 'Uneven', for instance, is an essential characteristic of each triplet, while also belonging to other things besides the triplet, for instance to the quintuplet, but not to anything not belonging to the genus 'number'. These attributes now must be collected until one has a collection of attributes which individually may extend beyond the thing of which they are attributes, but which precisely as this combination of attributes belong to this thing only. Herewith the essence of the thing has necessarily been indicated. One has thus succeeded in discovering which of the possible attributes are essential to the thing concerned. The triplet, for instance, is a primary uneven

number. 'Number' also pertains to other things besides the triplet; the triplet is not the only uneven number and the doublet is primary too. But this collection of attributes as a whole only belongs to the triplet.⁵⁰

That this specific combination of attributes indicates the essence appears from the fact that on the one hand they apply in general and therefore necessarily of the thing at hand, while on the other hand they do not indicate a genus that applies to this thing in general, but which also applies to other things. The essence is therefore indicated by an assignment of attributes which of necessity only applies to this indivisible thing (or species).⁵¹ In a similar context in *Topics* VII 3 this necessity even induces Aristotle to speak about a syllogism of the definition and of the essence.⁵² But this syllogism is to be distinguished from the syllogism discussed above which reveals the essence of a thing without proving it. The point in *Topics* VII 3 is only that, once certain conditions have been fulfilled, it has been proved or ascertained that what one says is in fact the definition of the thing. With this the first of the above-mentioned problems regarding the definition has been solved.

Aristotle now has a criterion for determining whether or not a collection of attributes expresses the essence of a thing. But he does not mention here the question of how we know that an attribute always or generally belongs to a thing and that it belongs to this thing only. He has not yet indicated how we can determine this other than by an assumption or by some sort of nominal definition. That a number of attributes always or generally belongs to a certain thing is presupposed here by Aristotle.⁵³ The third problem mentioned above with regard to the definition has yet to be solved therefore. Aristotle has yet to indicate how we acquire the elements of which the definition is composed.

By proceeding from the definitions of the simple kinds or species we also find the attributes that characterize the genus: the attributes common to the various species are at the same time the attributes of the genus.⁵⁴ Here one should therefore apply the method of generalization, after having previously subdivided the genus into species.⁵⁵

Aristotle solves the second problem mentioned above, that of the unity of the definition's parts, by re-introducing the method of division. First he reminds us that the method of division has no demonstrative force.⁵⁶ What follows, however, is found in a fuller account at *Metaphysics* Zeta 12. The exposition there is presented as a supplement, as far as the definition is concerned, to that in the *Analytics*.⁵⁷

Each definition is composed of the genus to which the thing belongs and that which distinguishes the thing from other things within the same genus.⁵⁸ Between the highest genus within which the thing falls and the

characteristic distinction all lower genera are found. In this way we obtain for instance the following division: living being (first genus); with two feet (next genus); without wings (next genus), etcetera. Now the genus has no existence outside the species, i.e. the kind indicated by the characteristic distinction.⁵⁹ The genus is like matter which is only brought to actual existence by the species.⁶⁰ Only the species or form combines with matter and in this way the concrete, individual, really existing whole comes about. As species, as genus in a specific form, the genus is therefore included in the unity of the species. And to that extent the definition need no longer be regarded as a plurality of terms.⁶¹ The question remains, however, in what way the distinguishing characteristics or differentiae form a unity. These differentiae now, which represent a descending order of genera, must be divided further and further until a differentia is reached that can be divided no further.⁶² This indivisible differentia is the species. During this procedure there is no point in repeating all preceding differentiae at each new division, for in the last differentia all the preceding ones are included. This last attribute in itself already indicates the essence, so that it is in the end one single differentia that contains all the elements composing the definition.⁶³

With this the problem of the unity of the definition's constituent parts has been solved. The definition is the result of division and a procedure of ordering. The essence itself is one and knows no order or priority of parts.⁶⁴ In the final result of division the definition appears to satisfy this requirement of unity. If, therefore, man is defined as a living being with two feet, the intermediate genus 'being with feet' need not be nominated; we have already seen that the genus 'living being' is included in the species 'being with two feet'.

The solution which Aristotle offers here to the problem of the definition's unity seems to be in conflict with a formulation at the beginning of *Posterior Analytics* II 13. According to this passage, the whole of essential attributes is specific to the matter concerned, and not only the last differentia reached by division.⁶⁵ Only later on in this chapter does Aristotle introduce division and arrive at formulations entirely consistent with *Metaphysics* Zeta 12.⁶⁶ The attributes ordered by means of division, which starts from the genus, each have their own place in the order, so that as the division advances one comes closer and closer to the species. The last differentia, finally, no longer extends beyond the species. As such it indicates the essence or the substance, that which actually exists.⁶⁷

The distinction incapable of being divided into further distinctions is therefore not merely a logical term, such as the middle-term-without-higher-middle-term. According to Aristotle, the characteristic distinction or differentia is that which, in contrast to the genus, really exists.⁶⁸ In this

respect he deviates from the views of Plato, for whom the greater importance of the genus in logical respect also implies a higher status in the realm of being.⁶⁹

But with this the third problem mentioned above, that of the origin of the differentiae, has not yet been solved. It has not yet been made clear what this origin is. The relationship between definition and reality has therefore not yet been determined. Aristotle has not yet indicated in what way the definition can be more than a nominal definition and to what extent it can be conceived of other than as a positing of something. On this point the method of division has provided no solution. Its function was only to determine which of the elements already available must be included in the definition and how one can proceed in this matter.⁷⁰

Meanwhile there are signs in these chapters that Aristotle is searching for a solution to the last-mentioned problem outside the sphere of logic. While the enquiry resulting in a definition is being conducted (e.g. by means of the method of division), the attributes are kept in view.⁷¹ This view itself is no discursive procedure, which division is.⁷² The essence (in the sense of the form) or the distinctive attribute is a unity, so that it cannot possibly be the object of discursive activity. In this context Aristotle uses terms, it seems, in order to indicate that at a certain point thinking reaches its limits, so that a cognition, a form of insight or intuition is required.⁷³ This must after all be the drift of Aristotle's remark at the beginning of the *Posterior Analytics*, where he says that there must be something besides science, which always rests on a basis and is therefore discursive.⁷⁴

The problem of the first principles without middle term or of the differentiae allowing no further differentiation is not solved until *Posterior Analytics* II 19.⁷⁵ In view of what has gone before, it does not seem that this solution can lie in one of the discursive procedures discussed in the *Prior* or *Posterior Analytics*. The aporia which emerges and remains to exist in Aristotle's logical and methodological enquiries seems only capable of being solved by means of an epistemology or theory of knowledge.

CHAPTER NINE

EXPERIENCE AND INTUITION

How is knowledge acquired of the first principles which have no middle term?¹ This question forms the theme of *Posterior Analytics* II 19. The role played by these principles has become clear from the preceding chapters of *Posterior Analytics* II. Chapter II 19 mentions in passing the various

aspects of the first principle. The principle is called distinction,² the universal;³ it is the principle of skill and science;⁴ it is that which can be divided no further,⁵ the simple.⁶ By means of these indivisible characteristics the essence of a thing is circumscribed or defined, there being one distinction that specifically characterizes the thing. The definition takes these characteristics as a starting-point and prior datum.

Neither definition nor division are procedures by means of which knowledge of these attributes is acquired. Both are logical or discursive methods, and as such they have no direct relation to reality.⁷ But the first principle is required to be a true principle and must answer to that which is.⁸ The definition merely answers the question of what something is. The question whether it is remains as yet unanswered.⁹ And on the other hand the preceding chapters have not yet made clear what Aristotle means in *Posterior Analytics* I when he calls the mind the principle of science.¹⁰ For mind or intellective intuition was only mentioned in the margin of Aristotle's discussion of the definition.¹¹ *Posterior Analytics* II 19 will have to be explicit on this point too.¹²

At the beginning of the chapter Aristotle rejects two ways of solving the problem of knowing the first principles. Firstly, it might be said that we have knowledge of the first principles without realizing it. Aristotle is of course referring to Plato's notion of knowledge that is hidden but can be recollected. He considers this solution to the problem illogical, for it implies that we possess knowledge which is clearer than proof and yet remains hidden.¹³

Secondly, it might be held that we must acquire knowledge of the first principles actively, since we do not possess it from the outset. This seems to be the only remaining solution to the problem. But Aristotle rejects this solution too. For how is it possible, he says, to clarify or learn anything without already having the knowledge on the basis of which this can be done?¹⁴ All instruction and all learning takes place on the basis of knowledge that is already present; for the syllogistic argument starts from the universal, the inductive argument from the particular. And the definition starts from the elements of which it is composed.¹⁵

Therefore we do not possess knowledge of the first principles from the outset, while equally we cannot acquire this knowledge later, since first principles are concerned, so that there are no principles more basic on which an exposition can be constructed.¹⁶ For this reason it is necessary, Aristotle concludes now, that we have some possibility of knowing the first principles without such a possibility implying that we already possess this knowledge, which is clearer than proof or learning.¹⁷ It must therefore be a possibility of acquiring knowledge without this knowledge

already being secretly present and without it presupposing another, inevitably more basic knowledge. This knowledge, then, is neither acquired by recollection nor by a form of instruction, whether the latter be syllogism or induction. It only supposes that the knower has the possibility of knowing in this hitherto unmentioned and as yet unexplained way.

Aristotle introduces here a notion which we might describe as 'the possibility of knowing without in any respect already possessing the knowledge to be acquired'.¹⁸ With this notion he marks the transition from logic to epistemology. For all logical knowledge depends on the possession of prior knowledge and the possibility of knowing something else on the basis of that knowledge.¹⁹ Thus Aristotle indicates explicitly that the possibility of knowing referred to is not a form of discursive reasoning.²⁰

This possibility now appears to occur in all forms of animal life. For animals have the possibility of discerning things, a possibility or potentiality which is called sensation.²¹ Among animals there are subsequently those that retain sense-images, even when sensation of the object no longer takes place. They possess memory and thus have knowledge independent of direct perception. Now where many memory-images are retained of the same thing, the thing marks itself off through its distinctive characteristic. The many successive impressions of the same thing result in a single experience concerning this thing. The experience is thus general, for it is based on many impressions, and at the same time it is one, for it unites in a single notion that which is identical in many things. This notion, once it has become independent of the many sense-perceptible cases by which it was made known, is the principle of skill and science. It seems to be Aristotle's view that the possibility of acquiring such intellectual notions is that which distinguishes man from animals.

Both in *Posterior Analytics* II 19 and *Metaphysics* Alpha 1 Aristotle thus describes the way in which we gain knowledge of the first principles.²² He describes it as a process; it is something that happens to the soul.²³ Memory and experience are not procedures and are not actively achieved. Owing to the fact that something repeats itself and something else does not repeat itself, that which repeats itself stands out and is remembered. In the long run this results in experience.²⁴ One gains this experience; one cannot take it.²⁵

Experience unites in itself all the different sense impressions of one and the same thing. But the concept which this gives rise to, the universal, cannot as such be an object of sensation. It is a function of the mind to know the universal.²⁶ Though science is a function of the mind, it is not science that apprehends the universal, for science is knowledge based on

other knowledge.²⁷ It is therefore the intuitive mind that apprehends or knows the universal. Only intuition yields a clearer knowledge of reality than the knowledge resulting from science and proof.²⁸ The intuitive mind is the principle of science, for it knows the principles which form the starting-point of science. The mind or intuition, then, is the principle of principles, says Aristotle, while each science, starting from the first principles, is the principle with regard to the whole field which it covers.²⁹

At the beginning of the chapter Aristotle already distinguished the possibility of knowing concerned from recollection and from syllogism and induction. In these passages he makes it once again clear that knowledge of the principles is intuitive knowledge instead of discursive or reasoned knowledge.³⁰

We have seen that Aristotle considers the knowledge of the principles to be clearer than the knowledge (based on other knowledge) which is characteristic of science. The knowledge of the principles is pre-eminently true, even if science is also a form of knowledge that is always true.³¹

First of all, intuition is true in a higher sense than science because it provides science with principles. Its object is of a more basic nature.³² The principles must be at least as true as the consequences of these principles.³³

In the *Metaphysics* Aristotle shows in various places that the truth of intuition lies not only in the basic character of its object, but also in the nature of its relation to reality.³⁴ In *Metaphysics* Epsilon 4 he explains that truth and error exist in the mind; for the thing concerned cannot err.³⁵ The mind connects certain notions or distinguishes between them and this connection or distinction can either be true or untrue. But Aristotle adds that, with regard to that which is simple and with regard to the essence, truth and error do not exist in the mind either.³⁶ This follows from the preceding; with regard to that which is simple there can be no question of making a connection or a distinction.³⁷ At the end of the chapter Aristotle says: the making of connections and distinctions belongs to the mind and does not clarify directly the reality outside the mind.³⁸ In other words, this is where knowing differs from thinking.³⁹

In *Metaphysics* Theta 10 we find the same view. With regard to that which is not composed of notions no connection or distinction can be made. One either does or does not make contact with that which is simple; it is or is not uttered.⁴⁰ Truth is here knowledge, and untruth is ignorance, instead of a wrong connection or distinction. There is either intuition or no intuition; intuition itself cannot err.⁴¹ Untrue contact with reality is an absurdity.

In *Metaphysics* Lambda 7, finally, Aristotle states that the mind, in its contact with reality, identifies itself with the object of intellectual knowledge and with entity.⁴² It would be impossible here for an identification to take place which at the same time is not an identification and which for that reason is untrue. According to all these passages from the *Metaphysics*, therefore, the truth of intuition lies in the fact that on the one hand it has the simple as its object, and that on the other hand it is direct contact and identification with this object.⁴³

The objects of intuition are the first principles without middle term, the indifferentiable attributes, the universal, the indivisible, the principles of the proofs.⁴⁴ The universal, that which is one and the same in many things,⁴⁵ indicates what goes together necessarily with a certain thing and what must therefore be a principle of science.⁴⁶ The universal now, says Aristotle, is the object of sensation.⁴⁷ But not *as* the universal; as such, detached from individual things or cases, the universal is known by intuition of the mind.⁴⁸ Once sense experience has brought to light the universal, the universal exists as a possible object of intuition.⁴⁹ But this object, the universal, was already accidentally the object of sensation and belongs therefore to concrete reality.⁵⁰ Thus experience does not bring about the universal. It only brings to light that which already exists in reality and makes it visible to intellectual intuition.

In other words, the essence of a certain sort of thing has existence in concrete, individual things. Whatever is, is a concrete, individual thing and also the essence of each thing belongs to its individual existence.⁵¹ With this view Aristotle dissents from the Platonic doctrine of ideas. He rejects the view that the universal exists as such.⁵² On the other hand, Aristotle retains the view that the object of science is necessarily the universal.⁵³ Thus he faces the double-edged problem that on the one hand no science is possible of the essence, which only has existence in the individual, while on the other hand science, which has the universal as its object, cannot reach that which really is.⁵⁴ The universal definition of the essence does not seem to make contact with reality, while conversely the essence, once it is joined to the individual thing, cannot, it seems, be an object of universal knowledge.⁵⁵

In order to solve this problem Aristotle introduces in *Metaphysics* Mu 10 the distinction between two kinds of science. First, there is the universal and unspecific science which has as its object the universal and the unspecific and which is only potentially concerned with real things; secondly, there is the science which is concerned with real things and which, as a specific science, has the specific as its object.⁵⁶ Thus the concrete, sense-perceptible essence is indeed the object of science, but not simply so. Aristotle gives the following example: only the grammarian

contemplating some real thing has this concrete A as an object.⁵⁷ But as a grammarian he only accidentally has this concrete A as his object, since the proper object of science is the universal. Likewise, but conversely, the eye perceives the universal accidentally and thus for instance finds in coloured things the universal 'colour'.⁵⁸

By means of this distinction Aristotle can retain the two statements which posed a problem when combined. The universal somehow belongs to reality after all, so that science is concerned with reality. And that which exists individually somehow embodies the universal after all, so that it can be the object of science. In the *Metaphysics* this interconnection between the universal and reality is in the first place introduced from the viewpoint of a philosophy of entity. In *Posterior Analytics* II 19 and also in *Metaphysics* Alpha 1 Aristotle goes on to show in what way cognition must be structured or composed to be able to correspond to this interconnection. And only then has the problem of universal definition and individual being really been solved.⁵⁹

The distinction between a universal, unspecific science and a specific, concrete science recurs in the *Analytics*. The theme of *Prior Analytics* II 21 is error.⁶⁰ First Aristotle explains why it is not possible to err when particular science is implied in universal science. If, for instance, one knows that B has A, C has B, and D has C, then it is absurd to state that no C has A, while stating at the same time that each B has A and each D has A. This is absurd, for one knows implicitly, i.e. on the basis of universal science, that C does have A, namely via B.⁶¹ In other words, one can simply stay within the limits of proper science here, so that error is not necessary.

Aristotle continues with some other examples, among which the following: each B has A, each C has B, hence each C has A. And he adds: to say this does not mean that one knows that C exists.⁶² If one knows that the sum of the angles of a triangle equals two right angles, it is not necessary to know that this triangle here falls under that general rule.⁶³ One may be entirely ignorant of this triangle here. In this case there is only universal science of the triangle; application of the universal science to a specific triangle is lacking. To that extent, therefore, particular science is lacking.⁶⁴ This is possible, since this particular science is not implied in the universal science. Particular science does not exist until a specific triangle has been perceived and has been subsumed under the general knowledge concerning triangles.

If one knows of triangles in general that the sum of their angles is always 180 degrees, one also seems to know that this triangle here has angles equalling 180 degrees. Thus subsumption sometimes immediately produces particular science. This may give the impression that one

already possessed this particular science. To understand would then be to remember, says Aristotle in reference to Plato's *Meno*.⁶⁵ But in fact it is not true that one already knows the particular triangle. Nor is it possible, therefore, already to have the application of universal science to this triangle here. Without sense perception science is only potentially a specific, concrete, not merely universal science.⁶⁶ We find the same view in a passage from *Posterior Analytics* I 1; here too Aristotle refers to the *Meno*.⁶⁷ Only through sense perception can universal science become concrete science. Whatever falls under the general rule must be adduced from the realm of sense in order to be subsumed.

Both in *Prior Analytics* II 21 and in *Posterior Analytics* I 1 Aristotle uses in this connection the term 'induction'. He says: with induction we simultaneously acquire particular science, as if we recognized it.⁶⁸ And: prior to induction we know universally and do not yet possess particular science.⁶⁹ As we have seen, the meaning of induction here is each time 'to subsume a perceived thing under the general rule'. Thus induction has the same meaning here as in the syllogism-based-on-induction discussed in an earlier chapter.⁷⁰ For in that syllogism one tries to make a general rule plausible by adducing particular cases of this rule. Whoever carries out the induction already knows the general rule, just as in the examples given universal science precedes particular science.⁷¹

In the passages just dealt with, however, the aim of induction is not so much to make the general rule plausible by means of a quasi-logical procedure as to illustrate this rule and thus shed some light on it. One shows that the rule, besides being a universal definition, is also knowledge concerning concrete reality. But here too the illustrative application serves to make the general rule acceptable to another person.

Aristotle continues in *Posterior Analytics* I 18 by saying that it is impossible to gain a view of the universal other than by means of induction.⁷² After what has gone before, this cannot mean that we come to know the universal through induction or that induction provides our first contact with the universal. 'To gain a view of the universal' means here that the universal is made clear by another person (by means of induction). This interpretation is confirmed by a formulation which Aristotle uses slightly later on.⁷³

The universal is already known to the person making an induction. Induction is a discursive procedure that serves to probabilize and illustrate prior knowledge. Thus it appears from the beginning of this chapter: induction and proof are the two ways in which we come to understand something.⁷⁴ On the basis of *Posterior Analytics* I 1 we know that Aristotle is referring here to forms of argumentation. At the conclusion of *Posterior Analytics* I 18 it appears once again that on the one hand induction argues

from particulars and percepts and on the other hand presupposes the universal as a previously known point of view. Aristotle says here that there is no science of the particular on the basis of the universal (which one knows), unless by means of induction.⁷⁵ Without induction one cannot move from universal to applied science. Aristotle is quite emphatic about this, for the whole point of his argument is to demonstrate the importance of sensation for science.

In the light of the foregoing we can recapture the meaning of what Aristotle says about induction in *Posterior Analytics* II 19. After his exposition on experience, he states there: “thus it is clear that we necessarily know the first principles by induction; for sensation also produces the universal in this way”.⁷⁶ As the phrasing makes clear, the second part of the passage gives an argument for the statement made in the first. In the second part of the passage Aristotle says that sensation somehow produces the universal. This refers back to the earlier discussion of experience.⁷⁷ By ‘in this way’ Aristotle is thus referring to experience. And because we know the universal by experience, we grasp the universal by induction. Induction, however, is not experience, for induction presupposes knowledge of the universal, as we have seen. Moreover, where induction is concerned, Aristotle never speaks of memory and experience. Therefore the meaning of the passage cannot be: ‘induction makes the universal known to us, for we have seen how sense experience causes the universal to be known and experience does not appear to differ from induction’. The last part of this interpretation contains a presupposition which is untenable and which in fact finds no support in this chapter. Induction and experience are radically different.⁷⁸

Yet according to this passage sense perception somehow runs parallel to induction, and insight into the former can provide us with insight into the latter. I interpret this passage as follows: since we come to know the universal through sensation of the particular, it subsequently makes sense to argue this (known) universal and make it plausible by subsuming particular cases under the universal. Thus one repeats in the manner of a procedure, i.e. discursively, that which experience achieved as a process, i.e. intuitively.⁷⁹ But for this to be possible one must already know the universal concerned. For in the long run experience produces the universal by the natural repetition of a thing’s essential attributes in the different existing cases of this thing; in induction, on the other hand, one must know how to collect all at once several cases of the universal thing or at least be able to produce one appropriate and striking example. Using the universal which one already knows as a criterion of selection,

one draws from previous experience one or more cases of the universal which is to be made acceptable to another person.⁸⁰

Actually, one only need look at the beginning of *Posterior Analytics* II 19 to see that Aristotle does not identify experience with induction in this passage. There, as was said before, Aristotle rejects knowledge based on previous knowledge, and thus induction, as a solution to the problem of the knowledge of the first principles.⁸¹

Aristotle distinguishes between experience and induction, between a process and a procedure, between finding the universal and arguing the universal that is known, between that which provides science with its basis and a merely dialectical method.

If, unlike Aristotle, one understands induction as a generalization by which an as yet unknown universal is found, then experience differs from this too. For the generalization has several characteristics in common with induction: it is a procedure and it is dialectical. One might add that the generalization is not unknown to Aristotle; he shows that by generalizing from the various species one finds the attributes of the inclusive genus.⁸²

Finally, experience must also be distinguished from abstraction. Abstraction is again a procedure; it is the method by which, according to Aristotle, the mathematician acquires his object of study.⁸³ But Aristotle never speaks of abstraction in relation to experience. Rather he sees an opposition between abstraction and experience.⁸⁴

In *Metaphysics* Zeta 11 Aristotle investigates whether it is possible to separate by means of abstraction the essence from the sense-perceptible, concrete thing. If one takes a circle, which is now made of copper, now of stone, now of wood, then it is easy to see that this diversity belongs to the material in which the circle has reality, and that this material is accidental to the essence of the circle. For the diversity does not touch on what the circle as such is.⁸⁵ But it is difficult to abstract from the material if one only sees circles made of copper.⁸⁶ In the same way it is difficult to determine whether or not flesh and bones belong to the essence of man. Abstraction is impossible here, for man's being has no reality in any other material than flesh and bones.⁸⁷ Moreover, abstraction is here superfluous, since man, unlike the circle, cannot be defined without taking his material parts into consideration.⁸⁸ Therefore definition of the essence includes both form and matter, albeit the whole of matter and form taken universally.⁸⁹ This subject allows for a great deal of interpretation and commentary; it is quite clear, however, that in these passages Aristotle does not regard the method of abstraction as a solution to the problem of the knowledge of indivisible, essential attributes.⁹⁰

Nor may experience and intuition be regarded as an abstraction carried out unconsciously. For an abstraction carried out unconsciously is also a procedure carried out by means of a criterion of selection, involuntarily. And so the guarantee that truth is reached is lost here. For in the eyes of Aristotle this guarantee lies in the fact that, in the process of intuition, the mind does not actively join or separate, so that it cannot err either.⁹¹ And the fact remains, finally, that Aristotle never speaks of an abstraction carried out unconsciously.

The theory of experience and intuition in *Posterior Analytics* II 19 brings the solution to the third problem mentioned in the preceding chapter of this study: that of the existence of the essence or of the origin of the distinctive attributes from which the definition proceeds. This means that Aristotle's discussion of the definition in *Posterior Analytics* II does not ultimately result in an aporia. Discursive reasoning finds its logical coping-stone or principle in an intuitively acquired element. With this element logic re-establishes its connection with reality. There was danger of it losing this connection, for the logical, which revolves around universals, was, in its capacity as a universal, partly object of the criticism which Aristotle directed at Plato's doctrine of ideas. It seems that Aristotle wishes to follow Socrates here. For according to Aristotle the latter also attaches great importance to the universal definition and the inductive method, but without for that reason granting an independent existence to the universals themselves.⁹² But Aristotle's view now is that the definition takes the universal attributes of a thing as its starting-point and that induction is a logical procedure by means of which one tries to convince another person that the universal known to oneself is true. He shows that both the definition and induction as well as the syllogism presuppose knowledge, since all three are discursive methods.⁹³ It is this, then, which leads him to construct an epistemology in which knowing is distinguished from thinking, or from discursive reasoning or logic. In this epistemology Aristotle shows how knowledge of the universal proceeds from knowledge of the concrete, individual thing, so that one may say that the universal has reality. Thus science remains possible even after the critique of the doctrine of ideas.

CHAPTER TEN

CONTROVERSIES ABOUT INDUCTION, EXPERIENCE, AND INTUITION

Induction was discussed at length in chapters 6 and 9 of this section. It was described as the dialectical procedure by means of which one tries to make a general statement plausible. Induction is a valid logical procedure on condition that the middle term and minor term are convertible *qua* extension. The person who is skilled must be the best in whatever activity one happens to single out, or one fails to make plausible the general rule that whoever is skilled is the best.¹ But whoever argues inductively need not adduce all cases exemplifying the general rule, should this be possible. He adduces a few cases only, implying that the other cases which one will find have the same purport. If the opponent fails to find an exception to the rule, he must accept the general statement. This statement has then been dialectically substantiated. We have now summarized the main points of what is said about induction in *Topics* I 12 and 18, *Topics* VIII 2, and *Prior Analytics* II 23. In these places induction has the function of a logical procedure. It performs this function by subsuming particular, concrete cases under a given general rule.

In the same way induction may also perform another function. For whoever shows a particular case of the general rule not only makes that rule logically plausible, but also illustrates it and thus relates it to perceived reality. Real science, says Aristotle, is science which is being applied to a particular, concrete case. For the universal as such has no existence, so that universal science, precisely inasmuch as it is universal, is not a science of reality. The meaning of induction in *Prior Analytics* II 21 and *Posterior Analytics* I 1 and 18 has herewith been indicated. Although the function of induction may vary, therefore, the procedure itself is always the same: the subsumption of the particular under the general.

In *Posterior Analytics* II 19 Aristotle might have both the first and the second function of induction in mind. The general rule can become clear by being made logically plausible. It can also be made clear by reminding the opponent, with the help of an illustrative case of the rule, of the general experience which he must have of the matter. It seems likely that Aristotle would speak of something like that if one combines Plato's theory of learning by recollection with Aristotle's views on memory and experience. But Aristotle never tries to assimilate Plato's theory to his own where he speaks of the second function of induction. This is understandable if seen against the background of *Posterior Analytics* II 19; after rejecting the view that the knowledge which precedes all discursive

reasoning is hidden, it has become impossible to remodel Plato's theory of recollection in the sense indicated. But that does not rule out the possibility that in this chapter Aristotle is thinking of the induction which is illustration, as was just indicated.

Induction cannot replace experience and intuition. Whoever lacks experience does not have the particular cases needed for inductive argumentation. And whoever fails to arrive at an intuition of the general statement does not see its truth and necessity. He does not arrive at science and continues to construct on dialectical arguments resulting in mere plausibility.

The foregoing interpretation of Aristotelian induction and its relation to experience and intuition is in more than one respect non-traditional and lacks on a few points the support of scholarly literature on the subject. Some support is provided by the simplicity and unity of the interpretation given, the more so since induction does not seem to have been a problem for Aristotle, in contrast to the knowledge of the first principles, the definition, and the universal character of science.

Ross now distinguishes between three forms of induction in Aristotle. First, induction is a way of leading someone to recognize a universal truth by means of particular cases (either the individuals of a species or the species of a genus). This is the dialectical induction of *Topics* I 12. It does not furnish incontrovertible proof. Secondly, induction, according to Ross, is the perfect induction of *Prior Analytics* II 23. Here one argues by means of *all* the species belonging to a certain genus, so that incontrovertible proof is established. Finally, according to Ross, Aristotle recognizes a form of induction in which a single particular case yields insight into the universal principle: the intuitive induction of *Posterior Analytics* II 19.² But it is my view, first, that Aristotle does not distinguish between the first two forms of induction mentioned by Ross, and secondly, that the third form found by Ross is in fact a process which Aristotle does not indicate by the term 'induction' at all.

Now my line of reasoning regarding the first point is that the induction of *Prior Analytics* II 23 too is merely a dialectical argument. In this chapter Aristotle shows only that if induction is to be an argument with any power it must be a potentially incontrovertible argument. It is not required that the person who argues inductively is actually exhaustive and capable of adducing all possible appropriate cases.³ The dialectical nature of induction lies in the very fact that it is only potentially or accidentally exhaustive, i.e. only in fact, and not in virtue of an essence uniting the various species. There is another reason for assuming that Aristotle only has potential exhaustiveness in mind at *Posterior Analytics* II 23: in *Topics*

VIII he also demands that induction be exhaustive, and there it is clear that induction does not actually achieve exhaustiveness.⁴ And vice versa this so-called dialectical induction is only valid as long as the general rule proposed proves applicable to all cases. As soon as the opponent produces an exception to the rule, the universality of the rule is cancelled.⁵ But until then one must act as if all cases have been considered; otherwise induction stops being an argumentative procedure altogether.⁶

Ross is surprised that in *Prior Analytics* II 23, the only place where Aristotle treats extensively of induction,⁷ he discusses 'its least interesting and important kind'.⁸ But Ross's surprise is unwarranted, for Aristotle sees induction here as the procedure *par excellence* for arguing a basic proposition that is not based on higher propositions itself.⁹ This is in agreement with what we find elsewhere in Aristotle's work.¹⁰ It is not to be assumed that in these other places Aristotle refers to another kind of induction than the one discussed in *Prior Analytics* II 23.¹¹ The induction discussed in this chapter is not unimportant, therefore, nor does it stand alone in Aristotle's work. He is not dealing with some rare or exceptional kind of induction.¹² The embarrassment which this chapter has caused to many interpretators is the result of a misconception, namely that Aristotle is not talking about a potentially complete induction here, but about a really complete and thus so-called perfect induction.¹³

Kapp provides a key to the correct interpretation when he calls induction a method of verification. He regards the induction in *Prior Analytics* II 23 as a demonstrative form of this method of verification.¹⁴ Kapp believes, therefore, that this form of induction, instead of having to do with the discovery of principles, is concerned with the establishing of given principles by means of their particular cases.¹⁵ Now precisely a comparison between *Topics* VIII 2 and *Prior Analytics* II 23 discloses Aristotle's views on the validity of this procedure.¹⁶ In comparing these chapters, however, we must, unlike Kapp, continue to regard the inductive syllogism of the latter chapter as a dialectical syllogism.

The third kind of induction which Ross finds in Aristotle is intuitive induction. He considers it the most important form of induction.¹⁷ He takes it to be a process of experience culminating in an intuition; according to Ross, this is Aristotle's subject in *Posterior Analytics* II 19.¹⁸ Experience and intuition together yield knowledge of the first principles of science. And if Aristotle says in this chapter as well as elsewhere that we grasp the first principles by means of induction,¹⁹ then it is natural to equate experience and intuition with induction, or at least to regard intuition as the result of an inductive process. This has led to the view that

Aristotle recognizes a kind of immediate induction, a view which is generally accepted.²⁰

We have seen in the preceding chapters of this study, however, that such a view is not properly tenable, neither on the basis of *Posterior Analytics* II 19 itself, nor in the context of the entire problem of the first principles. Ross's claim²¹ that induction is essentially a direct insight instead of an argument is at odds with the circumstance that Aristotle calls induction knowledge acquired on the basis of other knowledge.²² Induction is inference, a discursive procedure. Where the example adduced by the teacher leads the pupil to an immediate insight,²³ it is the teacher who performs the induction; the latter's method is discursive. In *Posterior Analytics* II 19, as we have seen, Aristotle rules out the possibility of acquiring knowledge of the first principles on the basis of prior knowledge. Induction cannot therefore be the subject of the rest of this chapter, which deals with the way in which we acquire knowledge of the first principles. Hence there is no reason for making a direct connection between induction and the intuition mentioned there.

Nor does Aristotle elsewhere connect experience and intuition with induction. Moreover, he never speaks of several quite different forms of induction, which would be improbable if this important term were to vary considerably in meaning. Finally, as we have seen, *Posterior Analytics* does no more than compare experience and induction. The point of this comparison lies in the circumstance that one part of the comparison refers to a process and the other to a procedure. The person arguing inductively tries to achieve by means of a procedure what experience accomplishes as a process. Ross does see that a comparison is concerned; nevertheless, he fails to interpret this fact correctly.²⁴ Kapp is also careful to point out that Aristotle is merely making a comparison.²⁵ But Kapp does regard experience and induction as two aspects of the same thing, namely of the dialogue between pupil and teacher: the teacher who applies the inductive method brings about a process of experience in the mind of the pupil.²⁶ In a certain way this interpretation has been anticipated by Aristotle himself. For in the *Topics* he shows how the universal notion remains behind in the memory even of someone who undergoes the inductive procedure without realizing it.²⁷ An objection to Kapp's interpretation, however, is that the knowledge which we acquire of the first principles would, in his view, be based on prior knowledge.²⁸

The process of experience in the mind of the pupil is in Kapp's eyes merely the psychological aspect of what is essentially a discursive procedure. A second objection to this interpretation is that one would only be able to know the principles of science by means of a dialectical procedure. But this is out of the question, for the principles of science are

true in a higher sense than science itself, whereas dialectic is less true than science.²⁹ Hamlyn gives an interpretation of *Posterior Analytics* II 19 which is somewhat similar to Kapp's on the point we have just been discussing.³⁰ He claims that Aristotle's exposition on experience only serves to indicate what powers one must have if induction is to be of any use.³¹ Induction is in this interpretation the real topic of *Posterior Analytics* II 19. The objections mentioned in relation to Kapp apply here.

Von Fritz tries to avoid these objections by claiming that *Posterior Analytics* II 19 deals with a kind of induction that is distinct from dialectical induction.³² Moreover, he considers the passage on experience and that on intuition separately and gives both experience and intuition their own specific object.³³ He strongly emphasizes that induction in the sense of experience and certainly induction in the sense of intuition can even be carried out on the basis of one single case.³⁴ He opposes the view that intuitive induction is an argument based on as many particular cases as possible.³⁵ In my opinion he rightly claims that experience and intuition do not involve argumentation. But this does not rule out the fact that, according to Aristotle, a large number of particular cases is essential to the production of experience. And it is precisely this which underlies the parallel existing between experience and induction.³⁶

All these authors fail to see that Aristotle's problem is the finite nature of the discursive sphere as such. This finiteness became above all apparent to Aristotle when he made a distinction between dialectic and proof. For the starting-point of the proof is true and clear, without there being a way left to establish this starting-point by means of some or other dialectical method. If, then, neither proof nor dialectic can establish the first principles, it must be in some other way that we have knowledge of them. For that reason Aristotle submits the definition to an enquiry. But the definition is universal and therefore has no direct relation to reality. Moreover, it is composed of elements, so that knowledge of these elements must precede the definition. These elements are known in a different way, not in a discursive way, whether this is by dialectic or by demonstration. Otherwise one would have to argue *ad infinitum* and one would moreover never reach reality. All this now seems to have led Aristotle to introduce experience and intuition. They are essentially non-discursive processes. Instead of logical procedures, knowledge of reality is concerned. And in Aristotle's view this knowledge, once it has been produced, is true in a higher sense than science. That is why it can form the basis of this science, though not in a logical sense.³⁷

Von Fritz's view that one single case can yield insight into the universal also implies that what Von Fritz calls the scientific form of induction cannot be abstraction.³⁸ For according to the theory of abstraction the

universal is gathered from a large amount of particular cases. But other scholars regard experience-intuition, induction, and abstraction, interpreted as an activity of the mind, as different terms for the same thing. We find this view in Ross, Mansion, Tricot, and Guthrie.³⁹ Le Blond justly protests that this view cannot be made plausible, at any rate on the basis of *Posterior Analytics* II 19, since the soul only seems to play the part of receptacle in this chapter.⁴⁰ There is no question of an actively abstracting mind. And an abstracting operation is in fact superfluous, because the universal, as Von Fritz remarks, already has reality in things. It is that which repeats itself in things and which is thus by nature distinct from the particular.⁴¹

Von Fritz holds that the mind which Aristotle speaks about at the end of *Posterior Analytics* II 19 gives 'immediate evident insight'.⁴² This mind gives intuition, in the sense of non-discursive insight.⁴³ Many authors speak of intuition in connection with the mind in this chapter; thus for instance Ross, Le Blond, Kapp, Mansion, Moreau, Düring, Tricot and Guthrie.⁴⁴ Nevertheless, several scholars make intuition depend yet again on preparatory discursive procedures.⁴⁵ The immediate character of intuition is thus played down considerably. Berti does this with great emphasis.⁴⁶

Two points are of essential importance here. In the first place, Aristotle, in my opinion, arrives at a sharp distinction between the dianoetic or discursive procedures of the dialectical and demonstrative syllogism and of induction on the one hand, and the sensory and intellectual processes of cognition on the other hand. Solely the latter are concerned in *Posterior Analytics* II 19. Induction is only mentioned in an aside and is not even the concealed subject of this chapter. Von Fritz now wishes to call the cognitive process of experience and intuition immediate because insight is produced by a single case. We have seen that this is untenable.⁴⁷ Nevertheless, this process, composed of sensation, memory, experience, and intuition, may be regarded as immediate in a certain sense. For it is still a process, something that happens to the human soul, without any addition on the part of the latter.⁴⁸ Its immediacy lies therefore in the fact that contact is made with the object of knowledge simply, without active intervention of the knower. And this is in fact the basis of the incontrovertible truth which, according to Aristotle, characterizes intuition. Now the logical flaw in Berti's view is that he believes Aristotle wishes to establish science, i.e. the highest form of discursive activity, by means of a discursive procedure of inferior standing, induction.

Induction is also of great importance for science. But, and this is my second point, only as the dialectical preparation of scientific exposition.

This dialectical preparation is indispensable for investigating or instructing the first principles of science. Only dialectic is capable of giving expositions in situations where one has not yet found these principles oneself or where the public does not yet recognize them. Aristotle provides evidence of this in his own work, which is largely enquiry and exposition at the same time.⁴⁹ But the actual finding of the principles and the insight on which science is based differ from dialectical enquiry and are not of a discursive nature. In Aristotle's view dialectical enquiry no doubt partly occasions intuition. But this is irrelevant with regard to the fundamental character of intuition.⁵⁰ Only intuition gives contact with the perpetually recurring, eternal principles, forms, or species.

PART TWO

ARISTOTLE'S EPISTEMOLOGY

CHAPTER ONE

LOGIC, EPISTEMOLOGY, AND PSYCHOLOGY

We have seen in the first part of this study how Aristotle's enquiries in the field of logic eventually lead him to draw up an epistemology or theory of knowledge. For sensation, memory, experience, and intellectual intuition, as described in *Posterior Analytics* II 19 and *Metaphysics* Alpha 1, cannot be regarded as logical procedures. In these chapters Aristotle describes in what way cognition provides thought with starting-points. This happens, as was said, in a process comprising different phenomena. In the second and third part of this study we shall examine what Aristotle says about these phenomena elsewhere, outside the logical works discussed.

There is, however, no single work by Aristotle which can properly be called an epistemological treatise. The treatise *De anima*, in which he discusses at length both sensation and intellectual intuition, is in the first place a psychological work. The same applies to the shorter analyses *De sensu et sensibilibus* and *De memoria et reminiscentia*, in which he talks about sense and about memory and recollection respectively.

If we are to find an epistemology in these works, then we must attempt to distinguish an epistemological and a psychological aspect in them. Again this distinction is not properly found in Aristotle's work. Hence there seems to be little reason for considering the *De anima* from epistemological and psychological points of view successively. One finds in this work only a psychology of cognition, and it is this psychology which is generally seen as Aristotle's epistemology.

Yet a terminological peculiarity which occurs in several authors writing on Aristotle provides us with a first reason for distinguishing between epistemology and psychology after all. The cognitive process described in *Posterior Analytics* II 19 is called a psychic process by most scholars.¹ In this chapter, according to them, Aristotle's enquiries are mainly of a psychological kind. Some authors, however, seem to use the terms 'psychology' and 'epistemology' indiscriminately.² Only Hamlyn distinguishes emphatically between what he calls a genetic epistemology

and a psychology.³ But he does not work out this distinction in detail. Other scholars draw attention to the fact that the simple notion can no longer have a logical basis and must therefore be explained in a theory of knowledge.⁴ Where it is claimed that Aristotle's logical enquiries have led him to assume the existence of an intellectual intuition, this assumption is said to have an epistemological background.⁵ A psychological background is never spoken of in this context. Finally, with regard to the theory of truth in *Metaphysics* Epsilon 4 and Theta 10, some authors distinguish between logical truth and ontological or antepredicative truth.⁶ As we have seen, the latter refers to the truth which characterizes intellectual intuition. Here it is less obvious to speak of psychological truth. Rather one might call this ontological truth 'cognitive truth'. It appears once again that the terms 'epistemology' and 'psychology' are not wholly interchangeable.

This brief orientation concerning the use of a certain terminology justifies to some extent the hypothesis that Aristotle is discussing a phenomenon, cognition, which admits of two kinds of approach. But it is not yet quite clear how far and in what way both approaches differ. The importance generally attached to the distinction between logic and psychology in Aristotle⁷ is as great as the neglect shown to the distinction between epistemology and psychology in his work.

Now *Posterior Analytics* II 19 itself shows a way of making clear the distinction between an epistemological and a psychological approach. We have seen how in this chapter Aristotle compares the process of experience and the procedure of induction. Kapp and Hamlyn, each in their own way, hold that two aspects of the same matter are concerned.⁸ We have explained that this is not tenable. Yet there is a similarity between experience and induction. They are similar in that both are concerned with the relation between particular cases and a general rule or proposition comprising the particular cases. As experience of particular cases causes the universal to be found, so induction, by pointing to its particular cases, provides some illustration of that which has been found. Although experience is just as concerned with particular cases as induction, yet it leads to an intuition which Aristotle regards as true *par excellence*. In this way intuition fulfils a requirement which emerged from his logical enquiries, namely that the starting-point of discursive science must be true in a higher sense than this science itself.

Moreover, Aristotle's logical enquiry has shown that truth in the logical sense always implies the possibility of error, even if error is mostly unnecessary. The reason for this is that discursive procedures connect and separate concepts; this is something one can do in the right way or in the wrong way. If, on the other hand, the mind faces a simple notion,

this simple notion is either known by the mind or it eludes the mind. But in the latter case there is no question of 'erroneous cognition'. If there is knowledge, then this knowledge is always true knowledge. Finally, intellectual intuition is required to bring the mind in contact with reality. For logic in itself lacks a relation to reality. It is therefore necessary that intuition, like induction, has a relation to particular cases, i.e. the individual things of which reality is composed.

The foregoing represents Aristotle's epistemology in its entirety, in my opinion. The rest of what Aristotle says about the process of sense experience and intuition merely provides a psychological background to this process and the epistemological requirements to which it is subject. If epistemology is understood in the way just indicated, this psychology of cognition adds nothing to the epistemology outlined, as shall become apparent.

In Aristotle, therefore, the primary object of epistemology is that which provides logical or discursive activity with a basis or starting-point and a relation to reality. There is only epistemology where, from a logical point of view, the requirements of that basis and that relation are concerned. Epistemology speaks in terms of logic, therefore; it speaks of the particular and the universal, of truth and untruth, and of the simple, but it employs all these terms in reference to the starting-point of discursive thought and in reference to the relation of thought to reality. Epistemology applies terms from the sphere of discursive reasoning to an area where no discursive procedure is possible.

Now that logic and epistemology have been clearly distinguished, the distinction between epistemology and psychology is clear too. For psychology, including the psychology of cognition, does not have the intimate connection with logic which, as was indicated, epistemology has. In his psychology Aristotle shows how the cognitive processes mentioned take place from the point of view of physics and First Philosophy.⁹ He again explains how one is to conceive the knower's relation to reality and why the knower knows truly in this relation. But the field of logic remains outside the scope of this discussion. What is now concerned is the cognitive process as a kind of mechanism.¹⁰

As a result of his logical enquiries Aristotle arrives at the assumption of intellectual cognition. His description of cognition is partly determined by the preceding logical enquiries: cognition is absolutely distinct from any kind of discursive procedure; it is always true; it has as its object that which is simple; it causes the universal to be known, namely by finding it in the actually existing, particular, individual things. The psychology of cognition must agree with this epistemology narrowly understood. It must provide a psychological background to the 'possibility' mentioned

in *Posterior Analytics* II 19, that of 'knowing without in any respect already possessing the knowledge to be acquired'. The pure mind mentioned by Anaxagoras, a divine intellect which creates order in the universe, must now in addition be regarded as a possibility of arriving at truth.¹¹ The psychology of cognition must show in what way human cognition knows truly by means of this intellect. In the *De anima* Aristotle seems to proceed from the assumption that such a 'faculty of truth' is required and exists. If now a distinction is made in the sense indicated between an epistemology narrowly understood and a psychology of cognition, then the origin of this assumption becomes clear; it is to be found in the logical enquiries carried out by Aristotle. Finally, it will be possible, owing to the distinction between epistemology and psychology, to test the interpretation of Aristotle's psychology of cognition which we shall present in the third part of this study. For we shall be able to compare it to the epistemological description of cognition which we have just given.

CHAPTER TWO

EPISTEMOLOGY IN ARISTOTLE'S PSYCHOLOGICAL WORK

Aristotle's 'epistemology' as defined in the narrow sense indicated is largely to be found in the previously discussed chapters *Posterior Analytics* II 19, *Metaphysics* Alpha 1, Epsilon 4, and Theta 10. In the *De anima* Aristotle says little about the truth and untruth of cognition, about knowledge of the particular or of the universal, about knowledge of the simple and of the distinctive attributes, or about the separation and connection of notions.

In *De anima* I 2 Aristotle notes that Democritus makes no distinction between mind and soul. In Democritus the mind is not some possibility of arriving at the truth.¹ This passage shows something of Aristotle's epistemological preoccupations. The same applies to the following chapter, where Aristotle discusses Plato's view that intellectual intuition is related to circular movement. Aristotle states here without further explanation that a single contact is sufficient for the production of insight.² This remark seems to refer to the theory of truth in *Metaphysics* Theta 10. And Aristotle adds that insight or intuition is more like the attaining of a state of rest than a movement.³ The source of this remark is the view in *Posterior Analytics* II 19 that the universal is brought to light by memory and experience.⁴ What we see happening here is that Aristotle, proceeding from his epistemological views, brings them in opposition to

philosophers who, in their discussions of the soul and the mind, do not speak about cognition or do not speak about it in the right way.

In *De anima* II 5-III 2 Aristotle treats at length of sensation. He develops a theory of truth with regard to sensation which runs parallel to the one familiar to us from *Metaphysics* Epsilon 4 and Theta 10. If there is sensation of the object that belongs to each sense organ, for instance sensation of colour by the eye, of sound by the ear, then no error is possible, according to Aristotle.⁵ This kind of sensation is always true. But if for instance we perceive by our sense of taste that gall is bitter and by our visual faculty that it is also yellow, then it is not another, sixth sense which apprehends that it is the same thing which, besides being bitter, is also yellow.⁶ The unity of that which the respective particular sensations cause to be known cannot be perceived by these sensations precisely inasmuch as they are particular and bound to a specific object. A sixth particular sensation is therefore just as incapable of doing so. The unity of the various sense data is perceived by the five particular sensations, but precisely inasmuch as they themselves form a unity too, or inasmuch as each forms a branch which goes back to the same root.⁷ Insofar as it is a unity, then, sensation can err. We see for instance something yellow and say wrongly that it is gall, erroneously proceeding from the earlier association of yellowness with the bitterness of gall, whereas we have no sensation of the bitterness now.⁸

The sensation of the particular object proper to a special sensation cannot err. In this case there is or there is not sensation; error here can only mean the absence of sensation. Error in the proper sense can only occur when a single faculty of sense uniting particular sensations combines or associates the particular sensations with one another. Instead of making simple contact with reality here, the faculty of sense connects and separates the data supplied by particular sensation.

Common to all sensation is the sensation of such matters as movement, rest, number, shape, size.⁹ To a greater or smaller degree every sensation has the possibility of having these as its object. That is why sensation of them is not accidental to particular sensation, which is for instance the case when we perceive of something white that it is also the son of Cleon.¹⁰ We have no particular sensation of 'son of Cleon', but we do of colour and of movement and the like. Now it is in order to perceive these common sense data, says Aristotle, that we have several forms of particular sensation.¹¹ Because the eye perceives colour as well as size, the size of an object is perhaps estimated according to the area covered by a certain colour, though the object as a whole is larger. The true size is concealed by the perception of colour. In this way much error arises about the common objects of sensation.¹² The error, then, lies in the

association of size with something else. On the other hand, it is impossible that this non-accidental sensation should err in itself. But if the size of the object is also perceived by another organ of sense, it becomes clear that there is a difference between the colour area referred to and this size.¹³

These views about sensory cognition and sensory association run parallel to the theory of truth concerning intellective cognition and thought which Aristotle unfolds in *Metaphysics* Theta 10. But we also find this parallel in the *De anima* itself, in chapter III 6: cognition of the indivisible is always true; error only arises when the indivisible is combined with something else.¹⁴ At the end of this chapter and at the beginning of the next, Aristotle contrasts intellective intuition with predication, the 'stating something about something' with which we were made familiar in *Posterior Analytics* II 1.¹⁵ Intuition is related to the simple statement of a thing's essence and is in this respect, as Aristotle says here in so many words, comparable to particular sensation.¹⁶

Aristotle reminds us in *De anima* II 5 that the object of sensation is the particular, whereas science deals with the universal.¹⁷ Memory, as a means of arriving from particular sensation at intuition of the universal, is not discussed in the *De anima*. In the short treatise *De memoria et reminiscentia*, where Aristotle speaks at length about memory, we find no trace of the topic's cognitive aspect familiar from *Posterior Analytics* II 19. Neither experience nor the relation of experience to intuition are mentioned. And in general in these works, which deal with psychology rather than with epistemology strictly understood, Aristotle says nothing about the transition from knowledge of the particular to knowledge of the universal. The same applies to the chapters *De anima* III 4 and 5, 7 and 8, as we shall see in the following part of this study.

Summarizing, we can say that, from the epistemological point of view, Aristotle's views on sensation and sensory association run parallel to those on intellective intuition and intellective discursive reasoning, views which we studied in the context of Aristotle's logical enquiries. And this parallel is explicitly confirmed in the *De anima* itself. Thus it appears that the theme of intuition and discursive reasoning plays a dominant role in Aristotle's logic and epistemology.

PART THREE

ARISTOTLE'S PSYCHOLOGY OF COGNITION

CHAPTER ONE

COGNITION AS THE OBJECT OF PSYCHOLOGY

Aristotle's psychology as found in the treatise *De anima* not only has cognition as its object. The first book also deals extensively with the views on the soul held by a few other authors. The second book gives a number of general definitions of the soul and considers the ability of living beings to feed and procreate. The third book explains in addition how living beings have desire and by what cause they move. Thus cognition is only one of the facets of natural life subjected to a psychological approach in the *De anima*. It is the only facet which interests us here.

In the light of the preceding part of this study it is not hard to see in what way the psychological approach of cognition is distinct from the epistemological approach. Psychology does not speak in terms of error and truth, of the particular and the universal, of concept and reality, of the relation between discursive reasoning and intuition. In his psychology Aristotle speaks in terms used by the physicist or by the practiser of First Philosophy. The subject-matter of psychology is the soul and the various kinds of soul which might be distinguished, the parts or functions of the soul, as for instance nourishment, procreation, motion. Sense perception is only one of these functions. Where psychology treats extensively of sensation and intuition, it speaks in terms of movement and alteration, of direction of movement, of passivity and activity, of potentiality and actuality and of impassibility. Sensation and intuition are treated here as psychic mechanisms.¹

Yet the psychology of cognition must correspond to epistemology in the narrow sense. For in both cases the object of study is ultimately the same. Perhaps psychology provides a different basis for the truth of sensation and intuition from epistemology and logic. It would have to make clear what it means to say that cognition is a process instead of a discursive procedure, as appears from *Posterior Analytics* II 19. Next, the parallel which epistemology finds between sensation and intellectual intuition would have to correspond to the parallel which a psychological discussion of sensation and intuition may find. Finally, psychology might show

what Aristotle understands by the universal with which epistemology is ultimately concerned.

Many authors make no distinction between cognitive psychology and epistemology in the strict sense. This is another reason for studying cognitive psychology if we are to gain a clear understanding of the topic of 'intuition and discursive reasoning in Aristotle'. We shall see that the way in which many scholars interpret the psychology of the *De anima* has led to views about Aristotle's epistemology which differ from the view put forward in the first and second part of this study. We shall now also have to substantiate this dissenting view from a psychological point of view and in order to do so we shall have to show that in this context too Aristotle speaks of an intuition which is only a 'possibility of knowing without in any respect already possessing the knowledge to be acquired'. And if it turns out that the most controversial chapter, *De anima* III 5, does not primarily deal with the topic of human cognition, we shall have to indicate what this chapter does signify.²

CHAPTER TWO

PSYCHOLOGY OF SENSATION

In the first place Aristotle characterizes sensation as a movement or an alteration.¹ Sensation is a physical phenomenon, albeit one in which both body and soul have a part.² Aristotle distinguishes three aspects of sensation: the faculty of sensation, sensation itself, and the object of sensation.³ If sensation is an alteration, then it is not simply an alteration of like by like, as some other philosophers maintain.⁴ A movement takes place between the faculty of sensation and the object of sensation. As with every movement, one side is affected and the other side affects. It is true that one side undergoes what the other causes it to undergo and that both poles of the movement are in this respect the same. But before the movement takes place one pole is only potentially what the other one is in actuality. Potentially, therefore, both are the same; in actuality there is a distinction as long as the movement is not taking place. By the movement one pole gains that which the other already has. It receives, suffers, or undergoes the effect which proceeds from the other, the cause of the movement. Through this cause, therefore, sensation takes place.⁵ In the *De anima* Aristotle assumes the general theory of movement and alteration outlined here to be familiar. In *De generatione et corruptione* I 7 a further explication of this topic is found.

Now a first question is how the two poles of movement distinguished by Aristotle are divided between the faculty of sensation and its object. Aristotle is quite definite on this point: the cause of the movement which is called sensation is the object of sensation. This object actualizes the existing potentiality of having sensation. The percipient's role in sensation is passive. He undergoes the action proceeding from the object.⁶

A second question is in what way the psychic movement of sensation differs from ordinary, purely material movement. The difference is not on the side of the object, for the object may well be an inanimate, lifeless body. What is characteristic of sensation is that the object from which the movement proceeds does not cause destruction on the passive side. Rather it causes the faculty of sensation to attain its true nature, i.e. perception.⁷ The faculty of sensation cannot be destroyed by an object of perception, since the faculty is impassive to this object.⁸ The faculty undergoes or suffers the object without suffering in Aristotle's somewhat cryptic formulation. The faculty is affected by the action of a body without the material thing itself penetrating into the faculty of sensation.⁹ The thing is perceived without its matter penetrating into the faculty. The impassibility of the faculty of sensation is insufficient only when the effect proceeding from the object is very powerful. An extraordinarily powerful impression can destroy the faculty of sensation.¹⁰

With regard to three kinds of sensation, sight, taste, and smell, Aristotle mentions a condition which must be fulfilled before sensation can take place in the way just described: the object of sensation must have been actualized as such. Colour is not visible in the dark and if that which has taste or smell is too cold, it does not cause the sensation of taste and smell.

In *De anima* II 7, which deals with sight, Aristotle explains this condition external to sensation proper. The object of sight is colour.¹¹ Colour is a property of that which is transparent, i.e. water or air. But these are only actually transparent when they are illuminated. In the dark they are only potentially transparent.¹² Inasmuch as there is light in the transparent, the transparent as such has actuality.¹³ Light is therefore accidentally the colour of the transparent, according to Aristotle.¹⁴ Accidentally, for light does not cause a body to have a certain colour. It is only partly cause of the body being coloured. But if the transparent is not illuminated, there is nothing to make potential sensation of colour become actual sensation of colour.

The transparent, brought to actuality in the way indicated, is moved by colour.¹⁵ Since the transparent goes from the extreme end of the body that is the object of sensation, via the air or the light between this body and the eye, to the pupil at the extreme end of the organ of sight, the movement which colour causes in the transparent can proceed uninter-

rupted to the eye.¹⁶ In this way sensation of colour takes place. The transparent is the matter through which form, i.e. colour, is transmitted.¹⁷ The coloured object does not therefore affect the visual faculty as a concrete thing consisting of matter and form. Sight receives only colour, without matter.¹⁸ Likewise the visual apparatus is the concrete thing, for instance the pupil, containing that which perceives in the proper sense. The visual faculty is not this concrete thing, therefore; it is a potentiality or mode of being of the apparatus of sensation.¹⁹

What we have said here also applies to the sensation of taste and smell. Warmth is necessary so that whatever potentially has taste and smell actually makes itself tasted and smelled. Warmth here is again a prerequisite, external to sensation proper, for the possibility of having sensation.²⁰

Aristotle seems to be in doubt as to the nature of the cause which makes light be in the transparent. He calls it fire in *De anima* II 7, and also refers to it as being akin to the celestial element.²¹ Elsewhere, in *De sensu et sensibilibus* 3, he speaks of 'a fiery element'.²² He mentions the sun and again fire as causes of warmth and dryness in that which has smell.²³ Aristotle's views with regard to a celestial element, the ether, form a separate theme. It does not concern us here. The only important thing in this context is that the cause referred to is a third factor which plays a part in the process of sensation, besides the faculty of sensation and its object. By being present at the object of sensation, this factor produces a disposition in the object which makes the object in some measure akin to that cause.²⁴ But that cause itself is still a body with an independent existence, for, as Aristotle says, two bodies cannot be in the same place.²⁵ The fiery element and the sun, or whatever it may be, introduce light and warmth in the object of sensation, so that light and warmth becomes a disposition of this object. In this way the object has actually become an object of sensation. Its matter, which has only potentially a form capable of moving the faculty of sensation, is now the object of an action which actually causes it to have that form, for instance a certain colour. Subsequently, the form which in this way acquires actuality and activity moves the faculty of sensation. And the latter is then finally affected by form without matter, for it is impassive to matter.

CHAPTER THREE

PSYCHOLOGY OF THE IMAGINATION

In *De anima* III 3 Aristotle gives a definition of imagination. It is, he says, a movement caused by actual sensation.¹ Imagination, therefore, is on

the one hand distinct from sensation, while on the other hand it cannot exist without sensation. Sensation of the particular object of sensation, in which error is impossible, also gives truth in the imagination, at least as long as the sensation is taking place. But error is possible as soon as the imagination starts to lead a life of its own with the sense images which have been put at its disposal. This is the case whenever an accidental or a common sensation is concerned. Even if sensation of a specific white is still taking place, one does not know that it is the son of Coriscus without the aid of the imagination. And even if the sensation of a specific object is still present, one does not know its size without relating the various sensations to one another.² Imagination, then, is a sensory function which preserves sense data and combines or associates them. Memory and dreaming are related to the imagination.³

Particular sensation is divided into five kinds. But these five particular sensations also form a unity; Aristotle in fact regards them as modes of being of the single undivided faculty of sensation.⁴ Imagination now is a function of the faculty of sensation precisely inasmuch as this faculty is a unity.⁵ When the object of sensation is no longer present and sensation can no longer take place, the imagination can work on and retain the image of the percept.⁶ This is the main difference between sensation and imagination. Aristotle even speaks of two faculties in this context.⁷ Elsewhere, however, he does not relate imagination to undivided sensation and the latter is that in which all particular sensations come together.⁸

Although imagination plays a role in perceiving the objects of sensation which can be perceived by all the senses (size, etc), it is the particular sensations themselves, as was said before, that perceive this kind of object.⁹ Nor is imagination implied in another kind of sensation, which, like undivided sensation, lacks an object of its own: the perception that we see or that we hear, etcetera. In *De anima* III 2 Aristotle asks by what faculty this perception is registered.¹⁰ It cannot be a separate, sixth sense; for that sense would pose the same problem. According to Aristotle, one can only see that one is seeing a colour if the latter seeing is also coloured, for the object of the visual faculty is colour.¹¹ A passage from *De anima* II 12 has the same purport: air in the ear becomes audible as soon as this air is affected by sound, so that the first auditory perception (by the air in the ear) becomes audible itself (by the psychic faculty of the auditory sense).¹² But it is not quite clear in these passages whether the first and the second perception form a single movement, or whether there are two movements.¹³ Aristotle is however clear on this point where intellectual cognition is concerned: the mind not only knows the object of its

knowledge, but also itself, for the knower and the known coincide as soon as the known, without its matter, is present and known in the knower.¹⁴ In the same way sense cognition will know itself as soon as the object of sensation is present and known in the percipient. In no respect does this self-knowledge or this seeing that one sees involve anything but affection by impressions.¹⁵ Aristotle is not referring here to self-knowledge in the sense of knowledge of one's own limitations or of one's own concealed essence or of one's own character. The point is only that the fact that one is affected by the action of a sensory object does not escape perception. And this *is* sensation.

This is made quite clear in *De sensu et sensibilibus* 6, where Aristotle discusses a special problem.¹⁶ That which is infinitely small does affect the powers of sensation, but cannot be perceived in isolation, Aristotle states here. Perception only takes place when enough of the object is transferred.¹⁷ If this is not the case, one does not know if one is perceiving and the object remains a merely potentially perceived object. Seeing that one sees, therefore, occurs when an impression affects the physical organ to a sufficient degree, so that this impression does not escape the psychic visual faculty. A separate sense faculty which perceives that one perceives is thus superfluous. According to Aristotle, perception of the percept is always perceived perception; unconscious perception is impossible.

None of this alters the fact that all particular sensations come together in the one undivided perception and that it is therefore ultimately sensation-as-one through which one perceives that, for instance, one sees.¹⁸ But in each case the direction in which perception moves here is towards the faculty of sensation. Thus imagination is out of the question in this context.

Sensation-as-one is on the one hand the single undivided sensation in which all particular sensations come together. On the other hand it is the active power which differentiates and connects sensations and which is capable of error.¹⁹ Aristotle still speaks of sensation in the latter case, but of sensation inasmuch as it is a unity, and imagination is a mode of being hereof.

Thus sensation and imagination are distinct from one another in that one constitutes a direct and the other an indirect relation to reality.²⁰ One of these faculties is passive and is affected, while the other is active and produces something. Sensation is in fact absolutely dependent on the initiative of the object, whereas imagination is possible whenever we want it, even if imagination depends on sensation for its content.²¹ It follows immediately from these distinctive attributes that sensation is absolutely true, while error may arise wherever a faculty, in this case imagination,

takes an active role. Thus the logical-epistemological point of view and the psychological point of view correspond; psychology explains in its own way why error cannot arise in one case and can arise in the other.²² At the same time Aristotle, as we have seen, enters the field of physics proper by mentioning a cosmic cause which activates the object of sensation first.

CHAPTER FOUR

DE ANIMA I AND II ON THE MIND

The psychology proper of intellectual cognition is found in *De anima* III. However, at various places in *De anima* I and II Aristotle makes pronouncements contributing to the interpretation of difficult passages from the third book. In this context we must not only consider those passages in the the first two books of the *De anima* in which Aristotle discusses cognition, but must pay attention to what he says about the mind in general. For it may be that the problematical chapters *De anima* III 4 and 5 are only partly concerned with the way in which intellectual cognition takes place, and that for the rest they centre on the question of how the human mind and the object of its cognition can exist in a world of animate or inanimate bodies.¹

It is already apparent in the first chapter of the first book that the intellect and intellectual cognition are a problem for Aristotle from the last-mentioned point of view. He says there that the soul does not act and that nothing happens to the soul without the body being involved. This applies to desire and to sensory functions in general. Intellectual cognition would seem to come closest to a function of the soul which exists separately from the body.² But, says Aristotle, if intellectual cognition too is a kind of imagination or cannot take place without imagination, then this cognition cannot take place without the body either.³ For imagination is a function of sense.⁴ It seems, therefore, that intellectual cognition cannot occur of itself, independently of the body.

This is the first hypothesis which Aristotle constructs with regard to intellectual cognition; the matter must be investigated further. This is confirmed by a remark made slightly later on: because of the connection which exists between body and soul, it is the task of the physicist to study the soul in general, or at least such a kind of soul as has this connection with the body.⁵ If there is a kind of soul which is not indissolubly joined to the body, then this soul would be the object of First Philosophy.⁶ As yet Aristotle leaves the matter undecided. But he has already pointed out

that most people, when discussing the soul, only seem to speak of the human soul.⁷ Aristotle asks, however, whether there is not more than one kind of soul and, if so, whether the different souls are distinct according to species or to genus.⁸ Next, he asks whether the soul of dogs, horses, man, and God can be determined by one and the same definition.⁹ From this we may infer that Aristotle also has in mind a kind of soul, that of God, which can exist without the body and which must therefore be the object of First Philosophy.

The following chapter confirms this assumption. Aristotle discusses here among other things the views of Anaxagoras and Democritus on the soul. According to the latter, says Aristotle, the soul does not differ from the mind.¹⁰ In Anaxagoras one also finds this view, but he claims besides that the mind is the cause of motion and order in the universe.¹¹ And in this respect, Aristotle seems to be saying, the mind cannot be a kind of soul which is indissolubly joined to the body. Therefore one may not speak of soul and mind indiscriminately. And Aristotle points out that what we call 'deliberative intelligence' (something which Anaxagoras and Democritus do not mention) is not found in all living things with souls. It is not even found in all human beings, he says.¹²

Further on in the same chapter Aristotle returns to Anaxagoras and Democritus. He says that the former regards the mind above all as a principle and that of all being he only considers the mind to be simple, unmixed with matter, and pure.¹³ Anaxagoras, Aristotle seems to be saying with approval, is the only one who regards the mind as impassive to all matter. The mind, according to Anaxagoras, does not form a whole with anything else.¹⁴

What Anaxagoras says about the mind viewed as moving cause of the universe, Aristotle says in *De generatione et corruptione* I 7 about the Prime Mover: it is immaterial and therefore impassive.¹⁵ And in *Metaphysics* Lambda 7 Aristotle himself speaks of a mind that is Prime Mover, God, eternal, simple, and impassive. Anaxagoras, however, speaks exclusively of a moving mind. He does not speak of a cognitive mind;¹⁶ nor does he show by what cause such a pure, immaterial mind can know.¹⁷ Aristotle sees a problem here, as we shall find later.

In *De anima* I 3 now Aristotle sets his view that the mind is pure and immaterial in opposition to Plato. First he says that the cosmic soul of which Plato speaks is the same as what is called the mind.¹⁸ But if this is true, then it is wrong to say that soul in general is magnitude, and also that the highest soul is characterized by a circular motion (which implies space, and thus magnitude), as Plato supposes.¹⁹ Aristotle goes on to show at length that intellective cognition is not compatible with magnitude, nor thus with spatial motion and divisibility.²⁰ For the mind

knows by touching the object of cognition in an indivisible moment.²¹ And instead of the mind knowing on and on indefinitely, cognition being an eternal circular movement, the knowing mind rather comes to a standstill and reaches a state of rest.²² Again, therefore, Aristotle emphasizes the purity of the mind. And again this does not prevent him from identifying this mind, which is in the first place introduced as the Prime Mover, with the knowing mind of man as well. But it is for First Philosophy to treat more extensively of the mind as Prime Mover and Divinity, he says.²³ Those who only speak of the human soul, as we now interpret the remark previously cited, neglect to speak of the soul as mind; this mind is a divine cause and yet somehow also a human faculty of truth.

In the following chapter, *De anima* I 4, we find a passage in which Aristotle gives a first indication of how the pure mind of the Prime Mover is related to the knowing mind of man.²⁴ First he states that it is not right to say that the soul learns or thinks; it is man who does this, by means of the soul, but not independently of the body.²⁵ And then he says: "But the mind seems to be born in us while (already) being a substance (or: an entity), and seems not to perish".²⁶ Thus the mind is not, like the soul, indissolubly joined to the body; it is therefore not so that only the whole of body and mind, i.e. man, exists independently. The mind as such is also an independent being and moreover seems to be born in man in this capacity.²⁷ Since the mind is not indissolubly joined to the body, it can exist separately and does not perish with the body. At a certain point in time man stops knowing and contemplating, but only because something other than the entity of mind, something within the human being, perishes. For the mind itself is impassive.²⁸ To deliberate, however, and to love or to hate are not things which happen to the mind. On the contrary, they are functions of the concrete whole of 'man' which has mind, inasmuch as it has this, says Aristotle.²⁹ And for that reason there is no longer memory or love once this concrete whole has perished;³⁰ for both belong to the concrete whole, consisting of soul and body. But the mind, Aristotle concludes, must be more divine and must be impassive.³¹

The concrete and perishable whole which is man and the divine and impassive entity which is mind do not form an indissoluble unity as body and soul do. Man has mind; but only to a certain degree and without the mind losing its independence from the human whole. The mind remains undamaged by what happens to this whole. What this passage seems to be saying is that the divine mind is present in man without losing its character of divine mind.³² Even if man perishes, the divine mind is independent and impassive and remains what it is. The question arises how far

Aristotle assigns an individual mind to each human being. It seems as if the mind is only present in man according to its effect or according to its action, in the same way that light is present in the transparent. Otherwise man would be composed of two substances: of the whole of soul and body, and of mind. This can hardly be reconciled with Aristotle's views.

In the last chapter of *De anima* I Aristotle asks whether we have intellectual insight, perceive, and move with the whole soul, or whether each of these functions is carried out by a certain part of the soul.³³ He then goes on to contest the view that the soul has parts. He argues that it is precisely the soul that gives unity to the body, which consists of parts. If the soul too had parts, it would in turn have to be kept together by another soul, and so forth *ad infinitum*.³⁴ It seems quite impossible that the mind could form part of the soul in this way, says Aristotle.³⁵ For it is hard to see what part of the body is given unity by the mind and in what way the mind does this. Thus Aristotle tacitly assumes that the soul does and the mind does not exist in connection with the body. Again the mind appears to exist as a substance along with or in addition to the concrete human whole composed of body and soul.

At the end of *De anima* II 1 Aristotle returns to the same subject. He says there that the soul does not exist independently of the body. For the actuality which the soul gives to the body (precisely as a living body) is for some parts of the soul at the same time the actuality of these parts themselves. But the actuality of other parts of the soul (or: other kinds of soul) is not that of some or other body.³⁶ In *De anima* II 2 it becomes clear what Aristotle is referring to: only the mind and the contemplative faculty can exist separately, in independence from the body. For in this case another genus of soul is concerned. This genus of soul can exist independently, in the same way that the eternal is independent of the perishable.³⁷

Among the various parts or functions of the soul there is thus one which is of an entirely different kind and which belongs to another genus of soul. In some or other way man participates in this kind of soul.³⁸ On the other hand, this soul remains independent and imperishable compared to man, who is composed of body and soul and who is perishable. The mind emerges from these passages as something divine; it is an independent entity and as such joins in some or other way the human soul without forming an essential unity with it. The mind remains immaterial and pure and is, in contrast to the soul of the human individual, imperishable.³⁹

CHAPTER FIVE

THE PSYCHOLOGY OF INTELLECTIVE COGNITION IN
DE ANIMA III 4

In this chapter of the treatise *De anima* we find the psychology proper of intellectual cognition. As before with sensory cognition, Aristotle shows here how intellectual cognition functions or works.

Aristotle begins his discussion of intellectual cognition by drawing a parallel between sensation and intuition.¹ He already drew attention to this parallel in an earlier chapter.² Sensation and intuition are similar in that both are processes in which the object of knowledge affects the cognitive faculty, which consequently comes to know.³ The cognitive faculty is moved by the object of intuition, just as the visual faculty, for instance, is moved by colour.⁴

If intuition runs parallel to sensation, the cognitive faculty must be impassive in the case of intuition too; it must receive form (without matter); and prior to knowing it must be potentially identical with this form, without already being this form.⁵ But there is also a distinction between sensation and intuition. This distinction arises from the fact that intuition knows everything and is not limited in this respect. In contrast, sensation is always a particular sensation, either of colour, or of sound, etcetera. Now to be able to know everything, the mind must be unmixed with matter.⁶ For if the mind were materially determined, it would be materially determined in a specific sense and would only be capable of a specific intuition. Prior to knowing, therefore, the mind is nothing but the potentiality of knowledge. It is not yet any kind of thing in actuality.⁷ For prior to knowing, the mind has not yet been activated by the object of knowledge (i.e. form without matter), nor is it anything material. Thus the mind is not tied to the body like the soul.⁸ Consequently, the impassibility proper to the potentiality of knowing intellectually is different from that of the faculty of sensation.⁹ In its relation to the object of knowledge, the mind is absolutely impassive. It can never be damaged by undergoing the action of this object. Sensation, on the other hand, is only relatively impassive. An inordinately violent impression may destroy the faculty of having sensation in a certain respect (colour, sound, etcetera), whereas the mind, when it intuitively apprehends an eminent principle, acquires all the more easily the insights subordinate to this principle.¹⁰

So far it is easy to see what is implied by the parallel which Aristotle draws between sensation and intuition and in what regard the two are distinct. As in *De anima* I and II, however, it is unclear how Aristotle conceives the relation between the soul and the mind. On the one hand, he

calls the mind unmixed with the body, pure potentiality, absolutely impassive, and holds that the mind exists independently.¹¹ To this extent the mind must be something other than the soul, for the soul is indissolubly joined to the body. On the other hand, he speaks of 'the mind of the soul' and 'the intellective soul', and says that the soul thinks and sees things in a certain way by means of the mind.¹² To this extent the mind is closely related to the soul. Yet this close relation does not seem to affect the status of the mind, which is still said to be the only higher faculty that can exist independently of the lower faculties.¹³

Owing to the object of knowledge, man's possibility of knowing becomes actual cognition. In this way the potential knower becomes somebody who has knowledge. But even then, says Aristotle in *De anima* III 4, the knower is still in a certain sense a potential knower.¹⁴ It is true that he now knows and is able to recall this knowledge on his own initiative, even if the object of knowledge is no longer present. But until he does this, he is not actually thinking about the object of knowledge and is in this sense still a potential knower. He only actually knows in the full sense of the word if he not only knows about something, but is also contemplating it.¹⁵

In *De anima* II 5 Aristotle gives an example.¹⁶ There are three different ways in which a person can belong to those who know, he says. In the first place all those know who are capable of acquiring science. In the second place those know who possess, for instance, science of grammar. But he who knows in the proper sense is, for instance, the grammarian who is contemplating a particular A. Aristotle explains that in the first and in the second case one is not in the same sense a person who knows potentially.¹⁷ For in the first case the person who knows is like matter which must be brought to actuality by something else, the object of knowledge; he is dependent on the presence of the object of knowledge. But in the second case he can contemplate the object of knowledge at will. In the first case one acquires science or knowledge for the first time. In the second case the grammarian or arithmetician takes something which he already knows and actually thinks about it. In the first case one moves from a state of privation to a positive disposition, that of science. The alteration which takes place in the second case is of a different nature. The difference may be compared to the difference between acquiring a possession and using this possession.

Now Aristotle makes this digression in *De anima* II 5 in order to make clear that the terms 'potentiality' and 'actuality' may vary in meaning.¹⁸ And in doing so he wishes to explain something about sensation. He adopts the transition from the possession of science to the actual con-

templation of that which one knows as a model for the transition from mere possession of the faculty of sensation to sensation.¹⁹ If this interpretation is correct, the passage which follows the digression on the transition from potential knowing to science and from the possession of science to actual contemplation must deal with the second of these two changes.²⁰ It is this alteration which serves as a model for the alteration which we call sensation. And it is this alteration which Aristotle uses time and again to clarify a specific transition from potentiality to actuality.²¹

In this following passage Aristotle goes on to distinguish between two kinds of passivity or affection: on the one hand, affection is the destruction of something by its opposite, for instance of the warmth of a body by contact with cold; on the other hand, affection is rather the preservation of something potential by something actual, and the change is to be considered the actualization of a potentiality by something which already has that actuality. If the possessor of science arrives at actual contemplation, destruction is out of the question. In this kind of affection and in this kind of alteration, that which is affected arrives at its proper nature.²² Aristotle says next that the transition from potential science to the possession of science is a special kind of affection too. But this alteration differs from the one just mentioned in that the person who gains insight and acquires science is instructed by a teacher or by reality or by both at the same time.²³ The person who already possesses science, however, arrives at contemplation independently and no longer needs to be instructed to do this. Finally, Aristotle compares this transition from the possession of science to actual contemplation with the transition from the possession of the faculty of sensation to actual sensation.²⁴

Sensation is a kind of affection and alteration, though that which is affected only gains actuality when it is affected. As was said before, affection does not imply destruction here, owing to the impassiveness of the sensory faculty. The fact remains, however, that the sensory faculty is affected by a movement which has its origin elsewhere.

In *De anima* II 5 Aristotle makes a distinction between the change which results in science or knowledge and the change which leads to actual contemplation of the known object; the second change serves as a model for sensation, as we have seen. In *De anima* III 4, on the other hand, Aristotle compares intellectual intuition, which results in knowledge, with sensation. Yet this chapter also mentions the distinction between the possession of science or knowledge and the actual contemplation of a thing. Thus there appears to be some discrepancy between *De anima* III 4 and *De anima* II 5. There is no problem, however, if only we realize that the transition from the possession of science to actual contemplation is mere-

ly Aristotle's model for indicating the various degrees in which a thing can be potential and actual. The model is undoubtedly older than the theory of sensation and intuition which Aristotle eventually worked out.²⁵

In *De anima* II 5 Aristotle contrasts sensation with intellectual contemplation by saying that thought takes place on its own initiative, whereas sensation depends on the presence of an object of knowledge.²⁶ It becomes clear in *De anima* III 4 that neither intellectual cognition nor sensation can do without an object that makes itself known. Only after intuition has taken place can one proceed by oneself to contemplate the known object.²⁷ Thus Aristotle's view is more complex here than in *De anima* II 5.

The parallel between what happens on the sensory and on the intellectual level is now complete. On the one hand, we find passive sensation and passive intuition; on the other hand, active imagination and active thought or active contemplation. In the first case the movement originates from the object of knowledge; this object produces an impression. In the second case the knower initiates the movement. In one case the relation to reality is direct, in the other it is indirect. And all this goes to explain why, from a psychological point of view, sensation and intuition cannot err, whereas imagination and thought may give rise to error.

This seems to conclude the psychology of intellectual cognition which we find in *De anima* III 4. It has become clear how intuition works. The proposition from *Posterior Analytics* II 19 that there is a 'possibility of knowing without in any respect already possessing the knowledge which is to be acquired' has now also been fully explained from a psychological point of view. It so happens that Aristotle pays no attention to the memory in these chapters of the *De anima*. But it is obvious now why imagination is not mentioned in connection with the process that leads to intuition. If imagination were to produce the object of intellectual knowledge, intuition would no longer have reality as its object in the direct way that sensation has; moreover, it would no longer have a simple object, nor would it always be true. Neither imagination nor mind produces the universal, i.e. the object of intellectual intuition. It must already be present in sense-perceptible reality, and is, as Aristotle says in *Posterior Analytics* II 19, already the object of sensation.

CHAPTER SIX

PROBLEMS CONCERNING INTELLECTIVE COGNITION IN
DE ANIMA III 4

At the end of *De anima* III 4 Aristotle discusses four problems in relation to intellectual cognition. The first problem has already been mentioned in *De anima* I 2, in the discussion of Anaxagoras' views: if the mind is simple and impassive, and if the mind has nothing in common with anything, then how can it know? For cognition, as Aristotle says, is a kind of affection, and that which affects and that which is affected always have something in common.¹ If the mind has nothing in common with anything, it cannot be affected by the object of knowledge either, it would seem.

In order to solve the problem, Aristotle refers to an earlier passage; the solution is the same as in the case of sensory knowledge.² The object of knowledge and the knower have in common that which is known, says Aristotle, except that the knower, prior to knowing, only possesses it potentially. Thus the mind which has nothing in common with anything does have potential communion with the object of knowledge. And for that reason the cognition of this pure mind may be called a kind of affection too.

A second problem is whether the mind itself is also an object of insight.³ Aristotle begins by advancing two provisional solutions to the problem. In the first place the mind might be an object of insight in that there is mind in 'the other things' as well.⁴ 'The other things' refers to the physical bodies which surround us and which form the objects of our cognition. If there were mind in these bodies, then the human mind, by knowing them and identifying with them, would also have mind as its object of insight. The problem would thus be solved. Moreover, the mind itself would not be an object of insight by virtue of something which is not mind; thus there would only be one way that anything could be an object of intellectual knowledge, namely through the presence of mind. And the tenor of the passage seems to be that this final presupposition is plausible. However, the solution as a whole which Aristotle advances here is not plausible, for it is clear that the physical objects that surround us are material and do not possess mind.⁵

A second possible solution might be that the mind is itself too an object of insight in that something is mixed with it, something which makes it an object of insight in the way that this something makes 'the other things' an object of insight too, says Aristotle.⁶ 'The other things' again refers to physical things. And as in the case of the solution which was pro-

posed first, this solution meets the requirement that it must be the same thing which enables both the object of knowledge, i.e. physical things, and the mind itself to be an object of insight. The difference to the earlier solution is that *possession* of mind is no longer predicated of that which becomes the object of insight. Aristotle now speaks of a *mixing* with something that causes something else, i.e. mind as well as physical things, to be an object of insight.⁷

In *De sensu et sensibilibus* 5 we find a passage which deals in a comparable sense with a mixing of two things, but now in relation to the senses.⁸ Aristotle says here that the elements (fire, air, water) have no smell or taste as long as nothing is mixed with them. The elements must be mixed with warmth and dryness, according to Aristotle.⁹ Dryness is a result of warmth and warmth is the external cause which develops taste and smell in things.¹⁰ There is thus a mixing of that which potentially has smell and that which actually has smell and warmth and dryness.

In this passage Aristotle describes, though none too clearly, a relation which in turn runs parallel, at any rate as far as the mixing with warmth is concerned, to the relation between that which is potentially transparent or coloured and that which produces light or the fiery element. A certain separately existing element, which Aristotle does not identify precisely, makes that which potentially has colour be that which actually has colour and which is thus capable of being an object of sensation. As such, however, this moving and causative element remains external to the object of its action. It is present at this object and only its effect, the radiated light, mixes with it.

If now Aristotle supposes that physical things and the mind are mixed with something which enables them to be objects of intellectual insight, comparable to the manner in which something illuminates a transparent matter and makes the potentially coloured matter an object of sensation, then this passage from *De anima* III 4 must deal with the intellectual equivalent of the condition, external to sensation proper, to which the process of sensory cognition is subject.¹¹

Aristotle, however, leaves the two solutions advanced for what they are and proceeds from a provisionally adequate solution to the problem: if the known object and the knower are immaterial, they coincide, so that the knower is known at the same time as the object of knowledge.¹² This is in agreement with what Aristotle said about the mind earlier: the mind is unmixed with matter and exists independently of the body.¹³ On the other hand it immediately leads to a new problem, the third one which Aristotle poses at the end of *De anima* III 4: why is it that the mind does not always have insight?¹⁴ For if the immaterial and the simple are the object of intellectual cognition, and the mind knows itself at the same

time, then it is not possible to see how such a pure and immaterial nature can be prevented from always having insight. For the absence of matter also implies the absence of potentiality.¹⁵

Aristotle immediately begins to answer the question raised and gives part of the solution to the problem. In the physical thing, i.e. that which has matter, the intelligible, i.e. that which by nature can be an object of insight, exists only potentially.¹⁶ Of itself, by virtue of its essence, the physical thing does not have the nature of being an object of insight; of itself it does not have a noetic or intelligible status. *On the one hand*, therefore, mind does not occur in material things, inasmuch as they are only potentially of an intelligible nature.¹⁷ Consequently, the human mind cannot identify itself with these physical things; for the human mind is an immaterial possibility of having physical things as objects of insight and identifying with them; it cannot identify itself with that which has matter.¹⁸ Under these circumstances, therefore, the mind cannot possibly know physical things. And *a fortiori* it is impossible that the mind always knows. *On the other hand*, the immaterial mind, which is what we were really talking about just now, cannot but be an intelligible actuality, Aristotle concludes.¹⁹

At the same time we offer here a highly specific interpretation of the phrase: "in that which has matter, the intelligible exists only potentially".²⁰ In general this is interpreted as: in what has matter, there is *in actu* (actually) something with a noetic or intelligible status, though it is bound up in matter and cannot therefore be known as such by the mind; it is only *in potentia intelligibilis*, that is to say, it is not yet actually knowable; only through abstraction of matter does it become actually knowable.²¹

But I interpret as follows: in what has matter, there is of itself only *in potentia* (potentially) something with a noetic or intelligible status; when, however, under the influence of something else, it *in actu* (actually) attains a noetic status, it is of an intelligible nature simply and therefore not only *in potentia intelligibilis*, but knowable as such, i.e. as something with a noetic status; a preliminary process of abstraction is not necessary.²²

Now the fourth problem, with which *De anima* III 4 concludes, is that the object of knowledge, i.e. physical reality, is only potentially an object of intellectual intuition, while in turn the knowing intellect of man can only be brought to actual intuition by this object.²³ Aristotle has now made clear under what circumstances the human intellect does not know and can only be an intellect in a potential sense. To some extent, therefore,

he has answered the question why man's intellect does not always know. It remains for him to indicate what makes a physical thing, which potentially has the capability of being an object of insight, an actual object of intellectual intuition; or: what grants it a noetic or intelligible status. A certain possibility or potentiality present in the material world must have been brought to actuality. This actuality may then in turn, precisely as this actuality and therefore without matter, actualize the possibility of knowing which the knower has.

Perhaps Aristotle sees here too a parallel with sensation: light causes matter, which is potentially transparent, to be actually transparent, so that matter assumes colour; thereupon colour reveals itself as such, without matter, to sight.²⁴ In no way does this involve abstraction of matter. On the contrary, the matter, which is characterized by potentiality, is brought to an actuality which it cannot possess of itself. This actuality may then make itself known as a specific actuality, i.e. without the potentiality or materiality on which it was based.

It may be that in *De anima* III 5 Aristotle will extend the parallel with sensation in this respect too and will discuss in this chapter a factor external to cognition as such as well as to man's faculty of cognition, a factor which is a prerequisite for the realization of intellectual intuition.

CHAPTER SEVEN

THE MIND IN *DE ANIMA* III 5

"Since now in the whole of nature there is on the one hand something which is matter for each genus (and this is what everything belonging to the genus potentially is), but on the other hand something which is cause and agent, by making all these things (as a craft does with respect to its material), those distinctions must also exist in the soul".¹

This is the opening sentence of *De anima* III 5. The line of reasoning is straightforward: soul is a form of nature; therefore a distinction which is characteristic of nature as a whole must also apply to the soul. And the distinction of which Aristotle speaks is the familiar distinction between a thing in potentiality and the same thing in actuality, where the former is brought to actuality by the latter. Aristotle clarifies this with an example: the craftsman also gives a certain actuality to his material, an actuality which the material possessed only potentially before. In a passage from *De generatione animalium* I 20 which also discusses that which actualizes or forms and that which undergoes formation, Aristotle gives the example of the carpenter who makes a bed out of wood.² On the one hand,

therefore, we find a cause which brings about a certain actuality in the material, on the other hand we find the material, which of itself is only potentially this actuality, but which, after having undergone formation, becomes the bearer of the shape or form proceeding from the formative cause. Aristotle emphasizes that no part of the carpenter himself passes into the material; through the causative movement he only supplies a certain form.³ Thus there is a cause of formation and an object of formation, and from the latter emerges the result of formation.

The distinction between the cause and the object of formation must recur in each genus of natural phenomena, says Aristotle. In *De generatione et corruptione* I 7 we find a passage which may explain why he uses the term 'genus' here: *qua* genus the cause and object of formation are identical, *qua* species they are not identical, he says here.⁴ That which is warm, for instance, heats that which is cold and is thus not identical to the object of its action. That which is cold, however, is potentially warm and belongs therefore to the genus of things which are warm or may be warm.

Aristotle makes wide use of this general theory. In *De anima* II 4 and 5 he applies it to nourishment and sensation. In *De generatione animalium* II 1 he applies it to the procreation of animals. In each case two matters are concerned which are external to one another and different from one another, one of which transfers its nature or a certain property to the other.⁵

A similar distinction and a similar relation between two distinct matters must also occur in the soul, according to the first sentence of *De anima* III 5. The soul must be a genus of two potentially identical things, which are not always actually identical, however, and which are therefore different *qua* species.⁶ We must investigate, then, which two different species of soul belonging to the same genus Aristotle can be referring to in this passage.

In this connection it is not obvious to assume that, according to Aristotle, the distinction between a cause and an object of action is to be found in each *individual* soul. For the same soul cannot be itself and at the same time a specifically different soul. In fact it is not easy to see what Aristotle could have had in mind in this case. For it is hard to conceive that anything could have itself as an object of action and by means of this action could moreover make itself be for the first time that which it already is.⁷

In *De anima* I 1 now Aristotle asks whether every soul is of the same nature and, if not, whether the different souls are different according to species or according to genus.⁸ We have seen in chapter 4 of this part of our study that Aristotle repeatedly contrasts the soul and the mind in *De*

anima I and II. Soul belongs to plants, animals, and man. In man, however, the soul does not transcend mere human nature and remains tied to the body.⁹ The mind, on the contrary, is incorporeal and of a more divine nature;¹⁰ the mind is a different genus of soul, Aristotle says in *De anima* II 2.¹¹ Of course this genus of soul belongs to God.¹² But man too has some of this divine intellect, as appears from several passages in *De anima* I and II.¹³

De anima III 5 now deals with the kind of soul which is mind. If we examine the meaning of the term 'genus' which is used in reference to the soul in this chapter, we find that it must indicate the divine intellect. For only this divine intellect, by its incorporeal and imperishable nature, differs *qua* genus from those kinds of soul which are indissolubly joined to the body. And assuming that the distinction which we have to make within this genus between a cause and an object of action cannot reside in the individual (human) soul, we can only conclude that Aristotle is referring to the distinction between the mind of God and the mind of man. For these are the kinds of mind which he mentions.¹⁴ Thus the human mind is in potentiality what the mind of God is in actuality. But it can acquire some of that divine actuality by the action proceeding from the mind of God.¹⁵

After the first sentence of *De anima* III 5, Aristotle continues as follows: "Thus one mind is of such a nature that it becomes all things, the other that it makes all things, as a kind of disposition, in the way that light is one. For in a certain way light makes potential colours into actual colours".¹⁶

We have seen in chapter 2 of this section what function Aristotle assigns to light in *De anima* II 7 and *De sensu et sensibilibus* 2 and 3: it causes the potentially transparent to become the actually transparent, so that the transparent reveals colour. At first, therefore, light is a cause external to the transparent. Next, light becomes a disposition of it. At the same time the source of light does not lose its independence. The appearance of colour coincides with the disposition of the transparent when illuminated. But the cause of the fact that there are actually colours is external to the transparent. Thus from the result of causation, the disposition of the transparent, no action proceeds to make potential colour actual colour. This example shows once again, therefore, that two different kinds of being are concerned in *De anima* III 5: there is a mind which is cause and there is a mind which is affected by the action of this cause.¹⁷

Aristotle draws here a parallel between events in the sensory and intellectual spheres. An apparent difference, however, is that light acts upon the *object of cognition*, whereas the causative mind actualizes the

possibility of knowing intellectually which man has. Strictly considered, however, light does not act upon the object of cognition, but upon the transparent. This transparency now is common both to the specific thing which has colour and to the medium and to the eye.¹⁸ That is why Aristotle can sometimes say that it is light which makes colour actual colour and other times that sight is only possible by virtue of the light inside the eye.¹⁹ Only through the presence of light does that which has colour actually become coloured and only then does colour, as the proper object of visual sensation, carry out the movement by means of which it produces sight.²⁰ On the other hand, as we might argue following this line of reasoning, Aristotle says in *De anima* III 4 that there is something which makes the mind an object of insight, as it makes physical things an object of insight.²¹ The distinction between the (human) mind and the object of its cognition is of no importance here, for as soon as there is an object of insight on one side and a mind capable of insight on the other, this object and the mind coincide.²² As far as both sensory and intellectual activity are concerned, therefore, it is of little import that Aristotle sometimes relates the factor external to the cognitive process itself to the object of knowledge, and other times to the cognitive faculty. And in any case the direction which characterizes the movement of the cognitive process on both levels is from the object of knowledge towards the cognitive faculty. Thus the parallel between the sensory and intellectual spheres remains in force in *De anima* III 5.²³

It is therefore natural to assume that, in Aristotle's view, this formative or causative mind is the cause which actualizes the potential of a physical thing to be an object of insight and to possess a noetic or intelligible status.²⁴ It makes the physical thing intelligible to some degree, so that mind can be said to be mixed with it.²⁵ Or: the mind of God causes some measure of noetic order to rule the physical world, regardless of whether this world is an object of human intellectual cognition.

Aristotle has now completely solved the third and the fourth problem posed at the end of *De anima* III 4. It is not only clear now why the human mind does not always know; we have moreover seen why it is not so that a mind which forms part of a material world and has the physical world as the object of its cognition *never* knows.²⁶

It is apparent from the phrasing in *De anima* III 5 that Aristotle does not primarily envisage a direct action of the mind of God upon the human mind. For he says that one mind becomes all things, whereas the other makes all things.²⁷ He is referring to that which is an object of insight for the human mind, but which is enabled to be this object of intellectual insight by the divine mind. Once there is an object of insight, it can make itself directly known to the mind, so that this mind, in the

same movement in which the object of insight is actualized, can become an actually knowing mind itself.

Aristotle does not specify here the nature of the relationship which exists between the mind of God on the one hand and the human mind and the potential object of insight on the other hand. Earlier chapters of the *De anima* indicate that it is a mixture of the divine with the perishable, a participation of the human in the divine.²⁸ At the same time it is important to note again that the mind of God merely fulfils a condition which is external to the cognitive process proper.²⁹ Aristotle's statements about the relation between God's mind and the object of its action partly reflect his views on what is called providence in Plato's *Timaeus*.³⁰ The issue at the end of *De anima* III 4 and in *De anima* III 5 is above all in what way the mind of God causes something of an intelligible or divine nature to rule among physical or material things.

This interpretation differs from the more generally accepted interpretation, according to which these passages are only concerned with the knowability, and not the existibility, of the noetic in the material world.³¹

Aristotle has now indicated by what cause the potential object of intellectual knowledge becomes an actual object of insight. He continues with a few indications about the nature of the causative mind: "It exists without body and is impassive and unmixed with materiality, being in essence actuality".³² The first three attributes listed here have already been mentioned by Aristotle in *De anima* III 4 in relation to the mind-in-potentiality.³³ This does not and in fact cannot apply to the fourth attribute, since a mind which is in itself potential prior to cognition cannot at the same time be essentially actual cognition. The causative mind, on the other hand, is as such a mind that really knows; it is the mind of God or the Prime Mover.³⁴

The distinction between the potentially intuitive mind and the mind which always knows has consequences for the way in which the first three attributes mentioned in relation to the causative mind also belong to the potential mind. For if this mind, in its very capacity of mind, is a mere potentiality prior to knowing, it cannot at the same time be an actuality which exists independently of the body, as is the case here. Thus the term 'existing separately ((from the body))' in *De anima* III 4 only makes sense inasmuch as the potential mind is conceived of as the complement of the causative mind.³⁵ The same applies to the (absolute) impassibility and to the immateriality of the potential mind, Aristotle seems to think; these are attributes which a being that cannot exist without a body cannot possess of itself in a more than potential sense. In the passage cited from *De anima* III 5, therefore, Aristotle draws a contrast between the potential

mind from *De anima* III 4 and the causative mind.³⁶ He qualifies the statements made earlier in *De anima* III 4 and says now that the agent is always superior to the object of its action.³⁷ For without this qualification the statements made in *De anima* III 4 would imply, as we have seen, that the human mind always knows, since the immaterial potentiality of the mind would constantly be actualized by an object of insight. However, just as something intelligible is present in physical things only by virtue of the mind of God, so the human mind cannot be immaterial and pure of itself.

In a following passage Aristotle expands on the dependent relationship between the potential and the causative mind and says: "Science-in-actuality coincides with the object; but science-in-potentiality is prior in time in the individual, whereas in general it is not prior even in time, so that it is not the case that the mind knows sometimes and does not know other times".³⁸

If there is knowledge, says Aristotle, the cognitive faculty and the thing that is known coincide. But with regard to the human individual who has insight the situation in which he does not know is prior to the situation in which he knows.³⁹ Therefore this individual does not always have insight. But in general, if the mind is taken as genus, the situation in which cognition takes place and the identity with the object are prior in time. For the potential mind of the human individual would not be able to achieve cognition if the causative mind did not exist as a reality and if it were not active prior to that individual's cognition.⁴⁰ This mind of God knows always.⁴¹ If this were not the case, it would to some degree only know potentially and would not be essentially actual. It becomes again apparent why the causative mind is superior to the potential mind. Thus the third problem which Aristotle posed at the end of *De anima* III 4 appears to occupy *De anima* III 5 entirely.

De anima III 5 concludes with the following passage: "Inasmuch as it separates itself, this mind is only that which it is, and only as such is it immortal and eternal (but we do not remember this, since this mind is impassive, whereas the passive mind is perishable). And without this mind one does not know".⁴²

The causative mind enters the human soul, says Aristotle, and that is why this soul has mind.⁴³ But inasmuch as this mind is in the soul, he adds, it is not what it is. It is like light, which on the one hand, according to its effect, is present in the transparent, but which on the other hand, according to its essence, is something else, and as a different body remains distinct from the transparent element. In a comparable way the causative mind mixes to some degree with the human soul and is present

in the soul according to its effect, whereas it remains distinct from the soul according to its essence and is superior to the object of its action.⁴⁴ The mind is immortal and eternal only in the latter aspect, as that which has an independent existence separable from the human soul. Therefore human immortality is out of the question; only the mind of God has eternal existence.⁴⁵ It is true that this mind allows man to participate in its actuality, but this participation is not such that immortality becomes an essential attribute of the human mind too. The human mind is only divine by virtue of something else and only to the extent that this other something asserts itself.⁴⁶

In fact, once the causative mind is in us according to its effect, we do not even remember the separate existence of the causative mind.⁴⁷ There is such a view in Plato; Plato's theory of recollection would lack point otherwise. But Aristotle rejects this view. For in his opinion the causative mind is in itself absolutely impassive, so that it does not have memory images; for memory images are only sensory and thus incompatible with absolute impassiveness. Moreover, the mind of God knows always, whereas memory implies that one knows about something without actually contemplating it. Therefore memory images cannot be implied in the effect which the mind of God has on the human mind either.⁴⁸

Next, Aristotle says that the mind which is affected by the action of the causative mind is perishable.⁴⁹ In this way he draws as sharply as possible the contrast between the impassiveness of the causative mind and the state of being bound to the body which characterizes the human soul. Only inasmuch as it is seen in relation to the causative mind can the potential mind be said to exist separately (from the body) and to be immaterial. For the potential mind must possess all the qualities of that of which it is the potentiality. However, the actualization of the potential mind takes place in a soul which is bound to the body, and thus in a form which no longer has the purity of the cause of actualization. The potential mind only participates in the causative mind.⁵⁰ The human soul possessing mind does not know anything itself without at the same time having a (sensory) image of the known object.⁵¹ The human mind itself is not independent of corporeality and corporeal magnitude.⁵² That is also why it cannot know pure immateriality directly.⁵³ It knows the eternal only as and inasmuch as it exists in material reality and it knows it by means of the universal which emerges from sense experience. Only in this way does the human mind become an actually knowing mind. It does not have direct cognition of the causative mind; it only concludes that God exists. The causative mind is postulated.⁵⁴

The human mind is perishable. But it is not perishable precisely inasmuch as it is a potential mind. For a potentiality is not a positive ac-

tuality and as such it cannot be perishable or imperishable. It can only be characterized by referring to the actuality which it has in a potential form and which in some measure it can possess actually. However, the human mind is perishable inasmuch as it is actual. Once it has knowledge, with the causative mind as a contributory cause, it is, as this human knowing mind, perishable. But of itself it is nothing: "It knows nothing without the causative mind"; thus Aristotle concludes *De anima* III 5.⁵⁵

CHAPTER EIGHT

THE HUMAN SOUL AND THE DIVINE MIND

THE MIND IN *DE GENERATIONE ANIMALIUM* II 3

The human soul is perishable, even when it has acquired mind or insight. Only the mind of God is eternal and imperishable, in Aristotle's view. Yet he considers the human mind to be something divine in man.¹ And although man has no insight without having images, yet intellective insight must be more than mere sensory imagination.² The solution which *De anima* III 5 gives to this problem is simple: the mind of God is present in the human soul only according to its effect and is generated in this soul in a form that corresponds to the corporeal mode of being of the human soul. Man's soul is thus capable of making contact with the divine by means of the object of cognition; through that contact something of a divine origin enters the soul. However, this something cannot exist in the soul in the way that it exists in God. The insights of the human mind are by origin of a divine nature, therefore, and this constitutes the essence of these insights. But in the human soul they can only exist in the form of images, even if this circumstance is accidental with regard to their divine nature. And in a comparable fashion the mind of God causes the whole of nature to be ruled by something which is divine: something which remains and is eternal, even if it exists only in physical, material things. Without it there would be no actuality which is on an equal standing with the human mind and which for that reason can be a cognitive object appropriate to this mind and capable of making it a truly knowing mind.³

In *De generatione animalium* II 3 Aristotle discusses the question of how the soul enters the newly formed living being. This question raises special problems where the mind or the intellective soul is concerned. In a few sentences Aristotle outlines the various aspects of the matter.

Regardless of whether the nutritive, sensitive, or intellective soul is concerned, the soul about to be formed first exists in a state of potentiality and only later in a state of actuality.⁴ Not until the time of procreation is the soul actually generated in the matter and in the individual potentially possessing a certain kind of soul. It may be that the soul comes to exist in the body of a certain individual without having existed as such before that time. It may also be that the soul exists as an actuality before it joins the body. This now is impossible inasmuch as the actuality of the latter soul is tied to the body and is in fact the actuality of this body. It is quite out of the question that the soul, before joining what is potentially a living body, exists as an actuality and enters the newly formed living being as an actuality from outside.⁵ This kind of soul cannot exist independently, for it cannot exist in separation from the body. Nor can it enter the newly formed being as an actuality by means of some or other matter. For this matter, sperm, is not potentially a living body, so that the soul cannot become an actual soul by the combination with sperm.⁶ Sperm can only transport the potentially sensitive soul. The sensitive soul does not gain actuality until it has joined what is potentially the body of a living being endowed with sense.

If this is so, the sensitive soul does not exist before joining the body and cannot, as an actuality from outside, enter the living being during its formation. As an actuality from outside, only the mind can enter the living being which is in the process of becoming an intellective being.⁷ For the actuality of the mind does not coincide with some or other corporeal actuality.⁸ Only the mind is immaterial. It enters man as an independently existing being, says Aristotle in *De anima* I 4.⁹ It is essentially actual, according to *De anima* III 5 and *Metaphysics* Lambda 6.

Man, however, is essentially tied to the body. And in fact he does not know this mind of God directly. The mind of God only comes to exist in man by means of the object of human cognition, the physical world. This occurs in the form of insights, therefore, which are by origin ultimately divine, but which, by their mode of being in man, cannot exist without sensible images, just as that which is divine and imperishable in physical things cannot exist independently of matter.¹⁰ Now if the mind which enters the body as an actuality from outside, as discussed in *De generatione animalium* II 3, is the same as the causative mind of *De anima* III 5, then the 'being generated from outside' referred to must also take place in the way indicated in *De anima* III 4 and 5.¹¹

CHAPTER NINE

CONTROVERSIES

THE HISTORY OF THE INTERPRETATION OF *DE ANIMA* III 4 AND 5

The interpretation of *De anima* III 4 and 5 which I have given in the preceding chapters is in some respects supported by other interpreters. With regard to its central theme, the causative mind in *De anima* III 5, Nuyens and Guthrie in particular reach to a certain extent the same conclusions. We have seen, however, that Nuyens and Guthrie disagree with each other on the nature of the causative mind; here I sided with Guthrie. On the other hand, Guthrie follows a more traditional view with regard to the function which Aristotle assigns to the causative mind. I put this question in a quite different perspective, one that is ontological rather than epistemological. Meanwhile it has become apparent how widely the interpretations of various passages in the *De anima* diverge.

Now it is quite impossible to do justice to all the interpretations which have been given of Aristotle's doctrine of the mind. In fact this chapter will only deal with a few important objections and arguments that have been advanced in this connection. By maintaining the chronological sequence in which the various interpretations have been put forward, we may in passing be able to trace certain lines and discontinuities in the history of the interpretation of *De anima* III 4 and 5.¹

1. Theophrastus asks how far certain statements made by Aristotle about intellectual cognition can be reconciled: firstly, his statement that intellectual cognition is an identification with the object of knowledge and an affection; secondly, his statement that the mind, and not its object, is the principle of knowledge and that the mind itself has the initiative to know.² In the first case intellectual cognition corresponds to sensory cognition; in the second case intellectual cognition has its origin in the mind, whereas sensory cognition is an affection by the object of knowledge.³ By the former Theophrastus is no doubt referring to *De anima* III 4, where intellectual cognition runs parallel to sensory cognition. The latter refers perhaps to *De anima* II 5, where Aristotle contrasts intellectual cognition with sensory cognition in the respect mentioned.⁴

It is not possible, however, to state the problem in Theophrastus' terms. For according to *De anima* III 4 the initiative to know only belongs to the mind once the mind has knowledge at its disposal.⁵ Only the mind which already knows can proceed to contemplate the known object at will; but it does not itself have the initiative to acquire this science.

It is true that in the *Posterior Analytics* Aristotle calls the mind the principle of science.⁶ But it seems that he does so in order to answer a question which dominates the *Posterior Analytics*: if thought is an activity of the mind, can the starting-point needed by this thought in turn be found by the reasoning activity of the mind? The mind is in fact called a principle here precisely inasmuch as it has the potential to be affected, to acquire knowledge.⁷ And in *De anima* II 12 Aristotle uses the term 'principle' to denote the faculty of sensory cognition, although according to Theophrastus this would be incompatible with the fact that sensory cognition is an affection.⁸ The specific meaning which Theophrastus attaches to the term 'principle' cannot, therefore, be traced back to Aristotle. The great faith which Barbotin puts in the authority of Theophrastus, here and in general, must make way for a degree of reserve.⁹

2. Theophrastus regards the human mind as a mixture of a potential and a causative principle.¹⁰ The causative mind is of origin a mind external to man.¹¹ It is, however, present in the human mind from the outset.¹² Thus Theophrastus does not make the presence of mind in man depend on the identification of the human mind with the object of its cognition, even if that may be precisely the view which Theophrastus ascribes to Aristotle.¹³ Theophrastus gives the impression here of not knowing what to do with certain statements of Aristotle which are altogether too extreme in his eyes.

The mixture of the potential mind with a causative principle in the human soul results in a loss of purity on the part of this causative principle; the human mind does not always think or know.¹⁴ Nevertheless, Theophrastus holds that the causative principle is present in the human soul once and for all, regardless of whether or not the mind knows. We have seen that Aristotle's solution to this problem is more elaborate: the human mind does not always know, since it too depends on the presence of the object of knowledge for the acquisition of intellectual knowledge. And only through cognition, it seems, can the human mind participate in the causative mind.

Finally, it does not seem possible to decide by means of the existing fragments of Theophrastus' works what function he assigns to the causative principle, insofar as it is present in the human soul. If Priscianus interprets Theophrastus correctly, the latter holds that the human mind itself makes the matter-bound objects of knowledge actual objects of intellectual cognition.¹⁵ On the basis of Priscianus' interpretation Barbotin ascribes a theory of abstraction to Theophrastus, and thus to Aristotle.¹⁶ However matters may stand in Theophrastus, we have seen that Aristotle does not use the term 'abstraction' in this connection, and

that the parallel which he draws between sensory and intellectual cognition does not in fact justify the supposition of such a theory.¹⁷

3. The foregoing has shown Theophrastus' reservations about the merely passive role which Aristotle assigns to the mind in the process of cognition. Next it has become clear that, in Theophrastus view, an external causative principle or mind also causes the presence of such a principle in the human mind.

We can be more precise on this last point. Theophrastus speaks of mixture here and Barbotin of participation, as we have seen. But the participation of the human mind in a non-human or supra-human mind can be understood in two ways. In one case the human mind is endowed once and for all with a faculty which from then on it exercises independently. In the other case the human mind is passively and continually, or at least intermittently, the object of the action of an extra-human mind. In the first case participation, i.e. the immanence of a transcendent mind in the human soul, entails that the human mind or the human soul acquires at some point in time a certain causative power. In the second case participation means that the mind undergoes the effect proceeding from the transcendent mind without it coming to possess such a causative power itself.

Thus Theophrastus seems rather to discuss the first form of participation.¹⁸ Aristotle, in contrast, speaks about the second form of participation, as I have attempted to show in earlier chapters. Via the object of its cognition the human mind is again and again the object of the action of the mind of God. In this way the mind of God is also in the mind of man. But this does not mean that the mind of man acquires the causative power which characterizes the mind of God; Aristotle says nothing to this effect. The human mind only becomes similar to the mind of God in that it acquires to some degree knowledge of the eternal, a knowledge which the mind of God possesses purely and fully. If we understand the causative action of the mind of God in the way indicated, namely as that which causes, teleologically, the intelligible or eternal to rule in a material and perishable world, then the assumption of a human causative principle is superfluous. And finally, if one were to assign a different function to the causative principle in the human mind (for instance abstraction), this causative principle would no longer correspond to the action proceeding from the mind of God, which would be illogical for a principle that participates in this mind.

4. As was said above, Alexander identifies the causative mind of *De anima* III 5 with the First Cause of *Metaphysics* Lambda, i.e. with the mind

of God.¹⁹ The interpretation which I have given of *De anima* III 4 and 5 agrees with Alexander on this point. We have seen that the argument with which Ross contests Alexander's view is not sound.²⁰ But other arguments have also been put forward against this view.

According to Themistius, Aristotle cannot be referring to the First Cause where he calls the causative mind the only immortal and eternal mind,²¹ since in Aristotle these attributes also belong to other divine beings.²² In Themistius' view, Aristotle is in effect saying: 'of the human faculties only this one is immortal and eternal'.²³ The objection to this view is that Aristotle merely contrasts the causative mind with the potential mind and above all with the actualized potential mind of man, so that the question of whether there are other immortal and eternal minds need not be raised, at least not in connection with the contrast referred to.²⁴

Themistius goes on to state that Aristotle compares the causative mind to light, and not to the sun, as Plato does.²⁵ Themistius' argument is hardly convincing, for Aristotle does attribute here the same power to light that Plato assigns to the sun in the *Republic*: to make potential colour become actual colour.²⁶

Most authors, however, refute Alexander simply by referring to Aristotle's statement that the distinction between two kinds of mind occurs in the soul.²⁷ It is then no longer necessary to argue that the causative mind cannot be the mind of God.²⁸ On the other hand, Guthrie has shown that several of the authors who emphatically reject Alexander's view come very close to taking up an identical position.²⁹

5. We have seen that Alexander and Themistius distinguish between material and immaterial objects of intellectual cognition.³⁰ We have also seen that there is no scope for such a distinction in the interpretation of *De anima* III 4 and 5 which we have given. These chapters do not speak of compound substances on the one hand and simple substances on the other hand, both of which might subsequently be known by the human mind. On the contrary, at the end of *De anima* III 4 Aristotle merely raises the problem of how ideas can exist in matter. For that which is joined to matter cannot of itself attain the level of an imperishable and immaterial mind and therefore cannot properly be the human mind's object of cognition. If now the mind of God grants actuality to the idea or form which is potentially present in matter, then this only means that there is now something in the matter which can make itself known as such, without the matter. There is still no question of an immaterial being, besides the mind of God. In Alexander, however, the distinction between enmattered ideas and immaterial ideas plays an important role; the Neoplatonic commentators of Aristotle invariably make this distinction.³¹

6. In Alexander's view, the human mind makes the object of sensory knowledge an object of intellectual knowledge by separating it from matter.³² In this way the universal is obtained from the particular.³³ The human mind, therefore, actively constitutes its own object of cognition. On the other hand, Alexander states that the causative mind, the Prime Mover, causes everything else to be known that is not by nature intellectually knowable.³⁴

Alexander makes the human power to separate the potential object of intellectual knowledge from its matter conditional on the knowledge which the human mind acquires of the natural object of intellectual knowledge, i.e. the immaterial mind or the immaterial object of intellectual knowledge.³⁵ For the potential, as yet unknowing human mind is of itself incapable of the abstraction in question.³⁶ And it is in fact in this connection that Aristotle postulates a non-human mind, according to the view which Alexander documents in his *De intellectu*.³⁷ The interpretation of Aristotle's text which leads to the view that there are material as well as immaterial objects of intellectual knowledge is therefore directly related to Alexander's theory of abstraction.

Human cognition is thus in the first place an identification of the human mind with something of an immaterial nature; subsequently, this mind also knows material objects, but only after a foregoing procedure of abstraction. Human cognition is successively a relation to something which transcends the human mind and a relation to something which it in turn transcends.³⁸ It is identification with the purely divine and operation upon sensibles. Neither one nor the other is found in Aristotle.

In this way Aristotle's view that knowing is knowledge of like by like recedes into the background in Alexander. Human cognition, insofar as it is not related to anything immaterial, is identified with abstraction.³⁹ Like Theophrastus, Alexander cannot accept that cognition is a form of passivity or affection. He calls cognition a combining of that which is similar or universal in the many individual things.⁴⁰ Whereas Aristotle contrasts the very term 'to combine' with what he calls, in the primary sense, cognition.⁴¹ Alexander, however, relates the concept of affection to corporeality; according to him, even sense experience is an act of discerning rather than an affection.⁴² Elsewhere Alexander calls affection merely a secondary aspect of cognition; in reality cognition is active, in his opinion.⁴³ We have tried to show that Aristotle's view is different.

Nearly all later interpretations of Aristotle are in this regard closely related to Alexander's views: human cognition is not passive; the human mind carries out an operation in relation to sense data and is able to do this in virtue of its relation to a supra-human mind. But the study which we made of Aristotle's text led to a different conclusion: the supra-human

mind, that of God, causes something with an intelligible status to rule perceptible and material things, whereupon the former is able to make itself known to the mind, without prior abstraction.

7. We have seen that Theophrastus discusses a principle which is immanent in the human mind, but which has its origin outside the human mind. According to Alexander, its origin lies in the Prime Mover, a purely immaterial mind. However, the union of the human, potential mind with the mind of God does not mean in Alexander that the resulting mind which has actuality is immortal, in the way that the mind which enters from outside is immortal.⁴⁴ The mind which enters man from outside is imperishable, so that there is something imperishable in man. But even then this mind is the mind of God and the individual human mind remains therefore perishable and mortal.⁴⁵ Thus it seems that in Alexander the mind is not allowed to participate once and for all in an active and imperishable principle. This principle is immanent only insofar as the human soul knows the mind of God. Compared with Theophrastus, therefore, Alexander puts less emphasis on the immanence of the transcendent mind. In this regard Alexander's view is more related to the second kind of participation distinguished above.⁴⁶ But not simply so, since on the other hand Alexander makes the abstracting potential depend on the knowledge of the immaterial acquired by the human soul; in this way he duplicates the causative principle after all.⁴⁷

Themistius speaks on the one hand of the potential mind of man, on the other hand of a different mind by which the potential mind is actualized.⁴⁸ He puts great emphasis on the resulting unity of both minds.⁴⁹ By means of this union with a naturally actual mind, man comes to possess once and for all an active, abstracting principle; the human 'I' consists essentially in the active mind acquired.⁵⁰ Themistius lays so much emphasis on the immanence of the active mind that one may doubt whether its transcendent origin still plays any part here.⁵¹ Yet he holds that there is a first mind, one in number, in which the human mind merely participates; otherwise it would be impossible for people to agree with one another.⁵² In Themistius' view, however, the causative mind which Aristotle discusses in *De anima* III 5 is primarily a human faculty.⁵³ Here his interpretation differs from that of Alexander.⁵⁴

8. One may doubt whether the difference between the views of Themistius and Alexander is in the final analysis a radical one. Themistius finds it hard to accept that the causative mind is an individual mind, which would entail a multitude of causative minds; for the causative mind is immaterial, and matter, according to Themistius, is

the principle of individuation.⁵⁵ Themistius then offers a comparison which he does not elaborate: the first illuminative cause is one, whereas that which it illuminates and which illuminates in turn is manifold, as light is manifold; but the sun is one.⁵⁶

Alexander, however, would not have denied that the immanence of God's mind in the many human individuals implies a certain division of the causative principle. The crucial point is whether this immanence is only the effect of the causative mind, or whether it entails that man possesses independently a causative principle, regardless of the duration of the causative mind's effect. Unlike Alexander, Themistius seems to incline to the latter view. The comparison with the sun and its rays only serves to solve the resulting problem of how an immaterial mind can be plural. But the comparison conceals the source of the problem; for the rays of the sun are merely the effect of the sun and do not possess the independence and purity which characterize the sun and which are incompatible with plurality.

Since the potential mind of man, according to Themistius, enters into an intimate union with the causative mind, he cannot but distinguish between this immaterial and imperishable human mind and the passive mind which Aristotle discusses at the end of *De anima* III 5; for this mind is called perishable there.⁵⁷ In contrast, Alexander holds that the potential mind perishes with the soul; for though being pure potentiality, it does not of itself exist as an immaterial actuality.⁵⁸ Again, in my opinion, Alexander stays closer to Aristotle than Themistius.

9. Philoponus⁵⁹ opposes Alexander's view that the causative mind of *De anima* III 5 is the First Cause. He holds that the First Cause not only actualizes a potentiality, but also grants existence to an entity, so that Aristotle would not have compared the causative mind to light in *De anima* III 5 if he had wanted to speak about the mind of God there.⁶⁰ Philoponus ignores the fact that the Prime Mover is not a creative cause in *Metaphysics* Lambda 7 either; the cause referred to by Aristotle already presupposes something that can be affected by its power of attraction.⁶¹ The God of which Philoponus is thinking here is perhaps not Aristotle's God.⁶²

According to Philoponus, the causative mind in *De anima* III 5 is the mind of a person functioning as somebody's teacher.⁶³ The teacher does not pass on knowledge, however; he merely removes the obstacles standing in the way of acquisition of the already existing, but hidden knowledge.⁶⁴ This view is strongly reminiscent of Plato; but to a certain extent it is also found in Aristotle.⁶⁵ However, it cannot possibly be used to interpret *De anima* III 4 and 5. In particular Philoponus' discussion of

'mankind', which always knows without prior potential cognition, is non-Aristotelian, in my opinion.⁶⁶

10. Simplicius seems to add little to what has already been said.⁶⁷ In Sophonias' paraphrase of the *De anima* we find a survey of the various possible interpretations of the causative mind in *De anima* III 5.⁶⁸ Perhaps we may infer from this survey, which may have been meant as an historical survey too, that gradually more and more emphasis was laid by ancient commentators on the immanence of the causative mind. They were increasingly less aware that in Aristotle a potentiality and the actuality of this potentiality cannot exist side by side in the same being. Moreover, the relation between the human mind and the mind of God was conceived to be a direct relation, whereas in Aristotle's view the potential mind attains actuality by knowing the physical world; the human mind is not capable of knowing the purely immaterial. We must conclude that, from Theophrastus onwards, the Greek interpreters of Aristotle were in this regard unable to get away from certain Platonic and Neoplatonic presuppositions. This does not rule out the possibility, however, that precisely such ultimately untenable interpretations of Aristotle played a part in the birth of Neoplatonism.⁶⁹

11. Al-Kindi provides in his *De intellectu* a survey of the various possible meanings of the term 'mind'; we already find such a survey in Alexander.⁷⁰

First of all Al-Kindi distinguishes a mind that is always in action. This is a non-human, transcendent mind. In contrast, the human mind is a potential, as yet unknowing mind; it is a potentiality of the human soul. The potential mind arrives at knowledge by joining the transcendent mind. In this way it comes to know the immaterial ideas and becomes a mind-in-action. The mind-in-action is identical with the object of its cognition; it identifies itself with the ideas derived from the transcendent mind. This object of knowledge is not, however, identical with the transcendent mind; the immaterial ideas are less pure once they are known by the human mind. Finally, Al-Kindi distinguishes between a human mind that possesses certain knowledge and this mind insofar as it is actually contemplating this knowledge, either at the moment of acquiring knowledge or when the mind remembers it. Thus I interpret Al-Kindi's highly condensed formulations in the *De intellectu*.

In the four meanings which Al-Kindi gives to the term 'mind' it is easy to recognize the four kinds of mind which Aristotle distinguishes in the *De anima*. In Al-Kindi we find successively the causative mind of *De anima* III 5, the potential mind of *De anima* III 4, the mind which has arrived

at knowledge but which is not contemplating it, and finally, the mind that is actually contemplating the known object, both of which are also mentioned in *De anima* III 4.

The assumption here which seems hardest to reconcile with Aristotle's views is that the ideas which the human mind knows proceed directly from the transcendent mind.⁷¹ There is a direct union of the human mind with the transcendent mind. Here Al-Kindi is following the views of the Greek commentators.

Walzer thinks that the Arabian philosophers are wrong in regarding the causative mind of *De anima* III 5 as a transcendent mind.⁷² We have tried to show, however, that their view is correct. But they differ from Aristotle in explicitly distinguishing this transcendent mind from the mind of God; according to them, the causative mind is one of the minds subordinate to God.⁷³ They do not explain in this context how there can be other minds beside, and a higher actuality beyond, the immaterial causative mind of *De anima* III 5, a mind which Aristotle moreover calls essentially actual here. In Aristotle's view, this must be out of the question; the causative mind is the First Cause.⁷⁴

In another work Al-Kindi seems to mention a preparation for the union with the transcendent mind.⁷⁵ In doing so, he follows the Greek commentators.

12. In general the Arabian interpreters of Aristotle hold that the highest intuitive knowledge and the union with the transcendent mind require some preparation of a discursive nature.⁷⁶ If the highest kind of knowledge is to be attained, the mind must already be an actuality in some less eminent sense. Again these interpreters use the Aristotelian terminology without keeping strictly to the use which Aristotle makes of the terms. Aristotle, it is true, believes that experience easily leads to cognition of the highest principles.⁷⁷ In this sense experience may be called a preparation for intuitive knowledge. But in Aristotle experience does not belong to the domain of discursive reasoning; it takes place entirely within the sphere of the senses.⁷⁸ In fact the potential mind cannot in any respect be considered a mind which already knows in some or other less eminent way. The authors referred to are following here in the footsteps of Plato and Plotinus, not of Aristotle.⁷⁹ Aristotle's aim was to ground discursive science in an intuitive cognition, as is apparent from his enquiry into the way in which we acquire knowledge of the principles of science. This enquiry seems to have been totally disregarded by the Neoplatonic interpretation of Aristotle's psychology.

13. Averroes holds that the potential mind of *De anima* III 4, though present in the individual human soul, does not multiply with the plurality

of human beings.⁸⁰ There is only one potential mind for all people, just as there is only one causative mind for all people.⁸¹ Therefore the immanence of both minds in the human soul in no way excludes their simultaneous transcendence. Averroes' views on the union of the human soul with this only initially transcendent mind are completely at odds with Aristotle's reservations about the possibility of man knowing anything immaterial.⁸² However, there are good grounds for defending the view of the singleness of the potential mind. For in *De anima* III 4 Aristotle calls this mind unmixed with the body, impassive, existing independently without the body.⁸³ His description of the potential mind corresponds directly to the properties which are assigned to the causative mind in *De anima* III 5: it exists separately, is impassive, and is unmixed with corporeality.⁸⁴ This correspondence is inevitable, since otherwise the potential mind could not be in potentiality what the causative mind already is in actuality. Now the properties assigned equally to both minds exclude plurality, for in Aristotle's view only that which combines with matter can be plural.⁸⁵ No distinction would be conceivable between several immaterial, essentially actual minds quite lacking potentiality, since each distinction implies that one mind is not something that the other mind is, which implies potentiality of the former mind.⁸⁶ Averroes has wholly respected the Aristotelian systematics in this respect. And this has led him to draw the right conclusion, namely that the causative mind is at the same time immanent in man and transcendent with regard to the human soul. But his views on the nature of the immanence of the causative mind are untenable.

Moreover, Averroes has not taken into account the fact that in *De anima* III 4 Aristotle formulates his reflections tentatively and as he goes along: according to *De anima* III 4, the potential mind belongs to the human soul;⁸⁷ yet it is immaterial and exists independently of the body; on the other hand the mind is related to matter in the way that the essence of a material thing is related to its material shape, so that to this extent it is impossible for the mind to exist separately;⁸⁸ next, Aristotle recommences to argue from the immateriality of the mind and its object of knowledge,⁸⁹ which poses a problem from another point of view, namely that both the human mind and the object of its knowledge exist in a material world characterized by potentiality;⁹⁰ in order to solve this problem, Aristotle proceeds to introduce a different mind in *De anima* III 5, a mind which is absolutely immaterial and actual;⁹¹ the purely potential correlate of this mind has no actual existence as such, so that only the causative mind exists separately from the body;⁹² according to its effect in the material world and as far as it is immanent in the human soul, the causative mind does not retain its attribute of immateriality;⁹³ the

potential mind, which is part of the embodied human soul, is perishable as soon as it attains any degree of actuality.⁹⁴ The systematics of the potential mind which Averroes privileges is thus merely one of the many successive points of view which play a part in *De anima* III 4 and 5.

14. For the Arabian interpreters of Aristotle the participation of the human mind in a supra-human mind is a union with the latter mind which can only be attained with great effort. The immanence and the transcendence of this mind are not mutually exclusive and a definitive or complete immanence of the supra-human mind is not reached. To this extent they discuss the second form of participation mentioned above: a living and, at best, recurring participation, without which intellectual cognition in the proper sense cannot take place.⁹⁵ On the other hand, the first form of participation is equally found in their treatises, inasmuch as they hold that the human mind, by virtue of its union with a supra-human mind, is capable of an abstracting operation.⁹⁶ In both regards they follow Alexander and the Neoplatonic interpreters of Aristotle. Owing to the specific background of their thought, however, they give more prominence to the union of the human soul with a supra-human soul than the Greek interpreters. From being a necessary precondition for human cognition, the supra-human mind and the knowledge of the purely immaterial has become more and more the goal to which the human soul aspires and the source of human knowledge, so that whoever pursues intellectual cognition must direct all his endeavours at a union with the supra-human mind.

Aristotelian here is above all that, according to the Arabian interpreters, the immanence of the causative mind in the human soul must be brought about each time afresh. Thus the human soul and the causative mind are not essentially joined together in the sense that the causative mind belongs to the human soul from the outset.⁹⁷ Nevertheless, they maintain that the essence of man may well lie in this causative mind, insofar as it is immanent; this latter view seems to be Aristotelian as well.⁹⁸

15. St Thomas Aquinas follows a quite different path from Alexander and the Neoplatonic and Arabian interpreters of Aristotle. It makes sense to speak of a break with earlier traditions.⁹⁹ In Thomas's view, the causative mind of *De anima* III 5 forms an integral part of the human soul.¹⁰⁰ It is not acquired during life, nor does man possess it in a fluctuating relationship with a higher mind. Man possesses this principle from the outset.¹⁰¹ Thomas, it is true, also holds that man, by possessing this causative mind, participates in a higher mind.¹⁰² But his views on

the participation of the mind of man in the mind of God are different from those of earlier traditions. It is not a participation of fluctuating intensity or a participation which must be sought and achieved each time afresh; for it is not possible for man already to know pure immateriality during his life on earth.¹⁰³ In Thomas the participation therefore no longer involves a cognitive relationship and no longer plays a significant role in the theory of knowledge and the psychology related to this theory. It is no more than the ontological backdrop to these. There is no question of a living participation.

After what has been said before, it is clear to what extent this involves a break with the earlier traditions: in Alexander knowledge of the immaterial provides a basis for the further activity of the mind; in Themistius too the relationship between the immanence and the transcendence of the causative mind seems to be a living relationship; indeed, for the Arabian interpreters of Aristotle, intellective cognition occurs pre-eminently in the relation which the human soul enters into with a superior mind. Moreover, Thomas departs from a Latin-Christian tradition on a crucial point here: in St Augustine and in those who combine his theory of illumination with Avicenna's theory of emanation, the illumination of the human soul by the mind of God is the most important subject in epistemology.¹⁰⁴ Thomas unconvincingly plays down the contrast between Augustine's views and his own interpretation of Aristotle.¹⁰⁵ However, the 'light of nature' which man possesses according to Thomas replaces the particular illumination by the mind of God which Augustine speaks about.¹⁰⁶ The participation of this naturally active mind in the mind of God has been reduced to a general illumination; instead of an epistemological event, it is an ontological fact.¹⁰⁷

In this way Thomas frees the interpretation of *De anima* III 4 and 5 of the Platonic, more or less mystic view that the human soul or the human mind can know the purely immaterial directly. According to him, the object of intellective cognition is the essence of sense-perceptible things; the Platonists hold a different view, says Thomas.¹⁰⁸ The mind's eye, therefore, is in the first place cast downwards, and not upwards, as in the Arabian interpreters of Aristotle. And that is why, according to Thomas, Aristotle introduces the causative mind in *De anima* III 5: while the ideas in the Platonic sense are in readiness as an object of intellective cognition, the essence of sensible things must be separated from their matter by means of an abstracting operation, and is known only after this operation.¹⁰⁹

In short, Thomas frees the interpretation of *De anima* III 4 and 5 of a Platonic misinterpretation, but reaches equally unsatisfactory results: he makes the causative mind of *De anima* III 5 a principle which is wholly

immanent in the human soul; he assigns an abstracting activity to this mind. Neither of these views is tenable, as we have seen.¹¹⁰

16. Thomas is particularly opposed to Averroes' idea that not even the potential mind forms an integral part of the human soul and that it is moreover one in number.¹¹¹ But this means that he must show in general how a mind which is wholly immanent in the soul can be immaterial and imperishable, as Aristotle states of the potential and causative mind in *De anima* III 4 and 5.

Thomas's opponents maintain, for instance, that if the mind belongs to the soul, it is the form of the body and cannot therefore be purely immaterial.¹¹² Thomas replies that the soul is indeed the form of the body, but that the mind is not; the mind is a part and a faculty of the soul and this part is immaterial. The obvious objection to this is that a faculty can hardly be more immaterial than that of which it is a faculty, the soul.¹¹³ Thomas replies that the soul is of such a nature that it is not entirely absorbed by matter.¹¹⁴ And he repeats time and again that the mind is not the form of the body; only the soul is this. The mind is a faculty of the soul. It is not yet clear how the part can be of a higher order than the whole to which it belongs. And even if the whole is apparently heterogeneous, it is not clear how this immaterial part forms a unity with the matter-bound whole. Thomas has considered this problem too; he explains that the mind does not in fact exist independently of the body, but that it is immaterial in its mode of operation, since it operates without an organ.¹¹⁵

The Arabian interpreters hold that a mind which is independent of the body always knows and does not need the knowledge of the senses; this agrees with Aristotle's view.¹¹⁶ Thomas, on the other hand, does not believe that this interpretation is correct. But he does not show how a faculty which does not exist independently of the body can operate without the body. The problem returns when Thomas answers the objection that the purely immaterial mind cannot be plural in correspondence to the plurality of people, since matter, the principle of multiplication, is lacking.¹¹⁷ The Arabian interpreters, who maintain that the human soul only takes part in a pure mind, have stayed closer to Aristotle in this respect. Hamelin claims that Thomas introduces a Platonic element into the Aristotelian doctrine at this point, namely a kind of soul which is independent of the body.¹¹⁸

Perhaps we should qualify this claim. It is true that in Plato the soul does not form a unity with the mind as it does in Aristotle; yet in Plato the soul is said to be shackled to the body. In contrast, the human mind which Thomas discusses is a sovereign, independent mind; man achieves

cognition quite independently.¹¹⁹ We have seen, however, that at the end of *De anima* III 4 Aristotle is confronted by the problem of how mind and an object of intellectual cognition can exist in a material world; it is shown in *De anima* III 5 that this is only possible owing to the operation of a non-human, immaterial mind. The human, of itself merely potential mind must wait until it gains insight; with the insight it undergoes the action of the causative mind. In Aristotle, therefore, a sovereign mind operating by virtue of itself is out of the question.

17. Cognition, according to Thomas, is an operation which must originate in the knower.¹²⁰ In his eyes, knowing cannot primarily be affection by an extraordinary illumination of the mind, as in the Neoplatonic and Arabian interpreters of Aristotle.¹²¹ The illuminative element necessary for the production of knowledge is located in the human soul, according to Thomas.¹²²

Thomas, then, is not alive to the role which is played in *De anima* III 4 by the concept of affection and the parallel between sensory and intellectual cognition. He refuses to distinguish cognition and the object of knowledge according to activity and passivity.¹²³ For in his view the activity of the causative mind is an essential part of intellectual cognition.¹²⁴ But if, as has been said, Aristotle sees cognition as cognition of like by like, and if the divine mind grants actuality in equal measure to the potential object of intellectual cognition and to the potentially cognitive human mind, then it is illogical to posit an operation (forming part of human cognition) which first raises the object of knowledge to an intelligible level. Moreover, it seems that in the eyes of Aristotle only a passive cognition can guarantee truth. Only when principles have been made available to the mind by means of intuition is the mind capable of reasoning and thinking independently, inasmuch as it starts from the principles which it possesses.

In the Neoplatonic and Arabian interpreters of Aristotle the mind's eye is cast upwards; in Thomas it is cast downwards. Aristotle, however, talks about knowledge of like by like. The mind of God causes something of an intelligible nature to be present in the material world. By means of its universality this intelligible essence is distinct from the merely sensible things. The universal, that which repeats itself, is automatically retained by memory and experience. Subsequently, intellectual intuition can take place.

18. Thomas holds that the causative mind in *De anima* III 5 is wholly immanent in the human soul. According to Aristotle, the soul is indissolubly joined to the body; this is Thomas's view as well. Yet Thomas

calls the mind immaterial and regards it as operating independently of the body. Here he exceeds the limits imposed by the Aristotelian concepts. From an Aristotelian standpoint, Thomas's view is untenable.¹²⁵

For Aristotle the immanence of the noetic in an embodied soul was only partly a problem. The question of what distinguishes the first, basic, intelligible insights from sense images is only asked at the end of *De anima* III 8.¹²⁶ It is evident here that Aristotle regards the human mind and its cognition as being joined to matter.¹²⁷ A human soul which knows intellectually cannot escape that which is required by the bond between body and soul. Aristotle is wholly consistent here. It is true that an immaterial mind, the Prime Mover, causes intellect to rule the material world, but this does not mean multiplication of the immaterial.

Aristotle, however, has no other special concepts to indicate the distinction between the sense images and intelligible insights. As sense perceptions represent things without their matter, so sense images, once they represent intelligible insights, are sense perceptions, but again without matter.¹²⁸ Immateriality is therefore a characteristic of sense perceptions as well as of sense images representing intellectual insights. But this immateriality is relative in the latter case too; God's cognition alone is characterized by an absolute immateriality. The immaterial in man resembles only *qua* origin the absolutely immaterial cognition of God's mind; *qua* mode of being it is merely relatively immaterial. Aristotle often indicates this intermediate level between the perishable and the eternal by the concept of 'the usual', i.e. that which is on the one hand necessary and which generally, therefore, exists in a certain way, but which on the other hand, because of the material circumstances, admits of exceptions or deviations.¹²⁹

19. Thomas holds that man has mind because God created the mind, the human soul.¹³⁰ And he believes that such a view finds some support in Aristotle too.¹³¹ The present scholarly consensus, however, is that there is no concept of creation in Aristotle.¹³² On the other hand, Nuyens calls Thomas's interpretation highly satisfactory from a philosophical point of view.¹³³ And he states that, in absence of a concept of creation, the noetic problem remained a problem for Aristotle.¹³⁴ According to Nuyens, Aristotle is unable to specify the relation between the soul and the mind in the individual, that is to say, between the soul as a principle which is indissolubly joined to the human body and the mind as an independent and immaterial principle of thought; the formulations are Nuyens's.¹³⁵ But Nuyens does not produce evidence that this was a problem for Aristotle.¹³⁶

In fact, the problem cannot be stated in Nuyens's terms. We have tried to show in the foregoing that for Aristotle the human soul only participates in an immaterial mind and does not achieve pure immateriality. The contradiction detected by Nuyens is absent. In Aristotle's eyes, there seems to have been no problem. From an Aristotelian point of view, however, the very concept of creation, as it is introduced by Nuyens, does raise a problem, for it justifies an (Aristotelian) impossibility: that something purely immaterial forms part of a being which is tied to the body.

20. The view that the causative mind in *De anima* III 5 does not or does not primarily refer to the human mind or a function of this mind has found little following after Thomas's firm rejection of this interpretation. There has hardly been any continuation of the Neoplatonic tradition of interpretation. There has, however, been a school of thought in the tradition of Alexander and Averroes; Zabarella is one of its representatives.¹³⁷ In the 19th century, Renan and Ravaisson regard the causative mind in *De anima* III 5 as a principle which is at first external to the human soul.¹³⁸ But the numerous, mostly German studies of this topic from the 19th and early 20th century pursue Thomas's line of reasoning on this point.¹³⁹ Nuyens is the first to reinvestigate the matter completely, and he comes to the conclusion that the interpretation put forward by Thomas is not tenable; the causative mind from *De anima* III 5 is not the human mind or a faculty of this mind. A. Mansion follows Nuyens to some degree and states that *De anima* III 5 deals with the human mind and a causative principle belonging to it on the one hand, and with a supra-personal mind on the other hand.¹⁴⁰ But Mansion fails to recognize the extent to which this chapter forms a unity; after the introductory sentences, in which two principles are mentioned, the rest of the chapter is an uninterrupted enumeration of the attributes of the causative mind.¹⁴¹ Mansion, however, regards this mind as a function of the human mind, necessary for producing the object of intellective knowledge.¹⁴² But we have seen that this object acquires actuality in a different way, by means of the mind of God. True enough, it is in that case still no more than a matter-bound object of intellective knowledge. But through experience one gains insight into the essence of this object.

In contrast, Aristotle sets little value upon the operation in which the human mind actively separates essence from matter.¹⁴³ At any rate abstraction cannot serve as a solution to the problem raised at the end of *De anima* III 4. For Aristotle asks here why the human mind does not always know.¹⁴⁴ The solution to this problem is found in the material and non-noetic condition of this mind and the object of its knowledge. Now if in *De anima* III 5 Aristotle were to make a mind which knows always¹⁴⁵

a function of the human mind, the problem as it is stated in *De anima* III 5 would no longer make sense.

For the rest Nuyens's interpretation has been largely ignored.¹⁴⁶ After Nuyens it was above all Guthrie who defended the view that the causative mind in *De anima* III 5 is not a human mind.¹⁴⁷ Although his conclusion that this mind is the mind of God must be considered right, *contra* Nuyens, he does not equal the accuracy of Nuyens's textual analysis.

21. Rodier wonders whether in Aristotle the object of knowledge makes the mind (into an actuality), or whether the mind creates the object of knowledge; a possible objection to the former interpretation is that Aristotle's view would then be akin to the doctrine of Ideas; a possible objection to the latter interpretation is that the object of knowledge would then be a result of thought, so that knowledge can no longer be an identification with the object of knowledge, as Aristotle states repeatedly.¹⁴⁸ Thus we summarize Rodier's view of the problem.

Notwithstanding the second objection mentioned by Rodier, Theiler states emphatically that "thought is in charge" in Aristotle, in contrast to the situation in Plato.¹⁴⁹ Now the object of knowledge of the human mind is not the immaterial Idea in the Platonic sense; to this extent there can be no Platonism in Aristotle. Nevertheless, it is still true that the intelligible, which is actually in matter (owing to the mind of God), brings the human mind to cognition, without this mind needing to produce its object of knowledge first. Cognition is a form of affection or passivity, therefore. It is intuition, albeit an intuition that does not, as in Plato, have immaterial ideas as its object. In both Aristotle and Plato, however, the object of knowledge has priority above the knower.¹⁵⁰ Aristotle expresses this priority by drawing a parallel between intellectual cognition and sensation and by regarding both as forms of affection. Here he and Plato part company again; for with regard to the very concept of affection, the latter draws a contrast between sensation and intellectual cognition.¹⁵¹ Aristotle plays down this contrast and introduces a passive intuition, since he cannot otherwise solve the problem posed by the finite nature of discursive reasoning.

CONCLUSION

Aristotle distinguishes between intuition and discursive reasoning; that was the hypothesis which formed the starting-point of this study. We investigated this distinction from the point of view of the relationship between intuition and discursive reasoning. Our enquiry began by looking at the various forms of discursive reasoning which Aristotle discusses. The most important of these are dialectical syllogism, which also includes induction, and demonstrative syllogism. Besides these definition too is a form of discursive reasoning.

The main characteristic of a discursive procedure is that it presupposes knowledge. One can only reason by taking previous knowledge as a starting-point. In the syllogism this starting-point is a general rule, in induction it is particular cases. And in order to construct a definition one must already know the elements contained in the definition.

Now dialectic and proof differ in the nature of the knowledge which is presupposed in the discursive procedure. Dialectic merely requires plausible knowledge; for as a starting-point of argumentation this will be acceptable to both partners in the discussion. It is enough for the course of discussion or enquiry. But proof requires starting-points of which one sees the truth oneself. Hence the principle of the proof cannot be a current or authoritative opinion; nor can it consist of particular cases of a general rule, since what follows from these lacks necessity. But if this is true, the principle of the proof cannot be the result of a dialectical syllogism or of an inductive procedure either. For both merely produce plausible knowledge, not necessary knowledge. Therefore the truth of the principle of the proof is found in a different way.

Now the definition orders certain data in such a way that the essence of a thing is eventually formulated. But in doing so the definition proceeds from the elements which it orders. In itself it has no relation to reality. And it is powerless with regard to the simple elements which it works with; definition of these is impossible.

The principle of the proof, therefore, cannot be found by appealing to a certain form of discursive reasoning. Dialectical syllogism and induction do not give the required necessity; the proof is powerless with regard to its own principles (under penalty of an endless regression or a circular argument); the definition as such does not provide a relation to reality. Consequently, if Aristotle states that experience and mind (intuition) make this principle known to us, experience and mind cannot be forms of discursive reasoning. This is promptly confirmed by the fact that

Aristotle introduces experience and mind as a means of arriving at knowledge without other knowledge having to precede this knowledge. Thus there is an unambiguous contrast between syllogism, induction, and definition on the one hand, and experience and intuition on the other hand. And it is also clear that experience and intuition establish a relation between knower and reality, but that discursive procedures do not.

Now dialectical syllogism and induction do play a certain role in connection with the first principles of the proof. Demonstration of these principles is no longer possible; they are first principles. On the other hand, one must acquire experience and insight by oneself; during discussion or instruction one cannot impose experience and insight on another person. If, nevertheless, one wishes to give an exposition with regard to the principle of the proof, one is forced to appeal to dialectical syllogism or to induction.

It seems obvious to assume that dialectical syllogism and induction may lead to actual intuition after all and may thus replace experience. But we do not find a statement to that effect in Aristotle. On reflection, this assumption is in fact implausible. In experience the particular cases of the general principle cause the mind to see this principle. In the same way induction appeals to these particular cases in order to make clear to another person the general rule which one knows. Thus the inductive procedure is reverse to the procedure of acquiring experience; it proceeds from the universal to the particular. It is true that induction leads the pupil from the particular to the universal, but Aristotle does not say that the pupil arrives at intuition in this way. It is more plausible to assume that induction cannot replace experience in the case of the pupil either. For only experience brings us in touch with reality; only it makes us see the necessity of the general rule. Induction merely aims at *de facto* acceptance of a viewpoint and cannot produce actual insight in another person. Still another assumption is that, after having been convinced by induction, the pupil and also the enquirer will appeal to their experience and in this way will arrive at intuition after all. This would be more in agreement with Aristotle's views. But he says nothing about this. Whatever the case may be, knowledge of first principles is, according to Aristotle, knowledge that does not presuppose other knowledge. It is therefore non-discursive knowledge. Hence it is not acquired by means of induction. It is the intuitive mind which gives access to the principles of the proof.

If these interpretations are correct, we can state that Aristotle's enquiries into discursive activity form a coherent whole. The way in which he introduces an intuitively knowing mind is clear and meaningful.

In the scholarly literature this coherence has not always been brought out with sufficient sharpness and depth. On the one hand, the definition

is not given a clear place among the various discursive procedures. On the other hand, the interpretation which is usually given of induction makes it impossible to see that, with the introduction of experience and intuition, Aristotle unmistakably leaves the discursive sphere. It is assumed more or less arbitrarily that Aristotle discusses several kinds of induction. What is neglected is the fact that at a decisive moment, at the end of a primarily logical enquiry, Aristotle assigns a central role (in connection with experience) to memory, which in no way constitutes a discursive procedure. And finally, interpreters associate abstraction too with induction and experience. But Aristotle does not use the concept of abstraction at all in this connection. Moreover, abstraction and memory cannot both be essential to the mode of cognition to which Aristotle is referring. Abstraction always implies a procedure which is carried out actively; memory implies no such thing.

Because of the way in which Aristotle introduces the intuitive mind, and because of the contrast which he thus creates between the various forms of discursive reasoning on the one hand, and experience and intuition on the other hand, it is meaningful to distinguish between logic and epistemology in his work. The fact is that the discussion of a logical problem leads Aristotle to introduce a theory of knowledge. In this theory he shows how logical demonstration is supplied with its principles and how the logical sphere makes contact with reality. The cognition in question cannot err; this knowledge is either present or lacking. It has that which is simple as its object; the separation or connection of notions, which cannot exclude error, does not occur here. In this respect sensory and intellectual knowledge run parallel: as error may arise in sensory association and intellectual discursive activity, so error is out of the question in both sensory and intellectual apprehension or intuition.

The theory of knowledge as it is given in, for instance, *Posterior Analytics* II 19 provides us with Aristotle's complete theory of knowledge. From the epistemological point of view which emerges from Aristotle's logical enquiries, the statements about cognition in the *De anima* have little to add to this theory of knowledge. What we find in the *De anima* is a different matter, therefore; it is a psychology of cognition, which uses the terminology of Aristotle's physics and First Philosophy.

The psychology of cognition in the *De anima* confirms the hypothesis that the intuitive mind neither carries out actively some or other procedure, nor presupposes abstraction. Just as sensory intuition is true for the very reason that the knower intuits passively, so intellectual intuition can be the unquestionable starting-point of demonstration in that, parallel to sensory intuition, it does not imply or presuppose activity on the part of

the knower. Aristotle shows that the psychic mechanism of both sensory and intellectual intuition implies a movement from the object of knowledge to the knower.

Next, both sensory and intellectual intuition are subject to a condition which is external to cognition proper. The object of knowledge, which acts upon the knower, is only capable of this action if it is brought to this action by a cause which is external to the knower as well as the known object. Without the presence of light, colour does not reveal itself; without the action of the First Cause, the mind of God, there is no order in material, perceptible reality and there is no universal, perpetually recurring form which can make itself known via memory and intellectual intuition.

An interpretation along these lines allows a consistent and clear interpretation of *De anima* III 4 and 5. Aristotle places the human mind on the same level as the object of its cognition; just as this object owes its existence in sense-perceptible reality to the mind of God, so the human mind owes its (initially potential) existence in the embodied soul to the knowledge which the mind gains of the object of its knowledge, and thus ultimately to the mind of God which is active in this object. In this way Aristotle is able to respect several principles at the same time: like knows like; the noetic exists only potentially in material, sense-perceptible reality; the human mind only gains actuality because something of a noetic, intelligible nature makes itself known to it.

Many authors have neglected the consequences of Aristotle's view that the knower is passive in sensory and intellectual cognition, and that the related systematics demand that in both cases a cause external to cognition converts the object of knowledge into something which can actually make itself known to the senses and the mind respectively. The logical-epistemological presuppositions with which scholars approach the *De anima* (e.g. that it deals with 'judgement' or 'abstraction') lead them astray. Not enough attention has been paid to the fact that Aristotle's enquiries are primarily presented from a physical and metaphysical point of view. If this last point is kept in mind, however, and if one considers further that Aristotle maintains here his view that man does not live on the level of the Platonic world of ideas, then it becomes clear that in the *De anima* Aristotle tries to explain how mind is possible in an embodied soul and how the object of this mind's cognition can have actuality in a material world. The starting-point of his explanation, however, is the pure and immaterial mind of God. It seems that the difficulties surrounding *De anima* III 4 and 5 can be brought to a good solution, if only we see that Aristotle's problem is the discrepancy between this starting-point, namely the fact that mind is immaterial, and the materially bound human situation.

NOTES

Notes to Introduction

¹ Compare for instance the interpretations of the Aristotelian theory of induction given by S. Mansion, Von Fritz, and Hamlyn.

² Guthrie 315 cites Ross on this chapter and writes: 'No scholar can approach without extreme diffidence the subject of the Active, or Creative, Reason, "perhaps the most obscure and certainly the most discussed of Aristotle's doctrines" (Ross)'. And Barnes (1982) 68 writes: 'perhaps the most perplexing paragraph he ((Aristotle)) ever wrote'. With regard to *An. Post.* II 19, *Met.* Alpha 1, and *De an.* III 4 and 5, S. Mansion (1981) 341 writes: 'des textes bien connus, mais d'une difficulté décourageante'.

³ Hamelin, Le Blond, Ross (1949), Oehler, Von Fritz.

⁴ The word νοῦς. Cf. with regard to the term 'intuition' Grene 241: 'We have not to do here with a *priori*'s, with innate ideas, or the Cartesian light of nature. It is not the mind turned inward on itself...' (unless stated otherwise, italics are those of the author cited). Couloubaritis 468 holds the same view: 'il ((νοῦς)) n'est nullement quelque faculté qui préexiste à son objet (si ce n'est en puissance) et qui, de ce fait, intuitionne les principes'. Yet this does not make the term 'intuition' useless. Where this term is used, however, read: 'intellective cognition' or 'intellection'. Where νοῦς is translated as 'mind', neither the discursive nor the intuitive function of the mind is explicitly meant. In this study we do not discuss Aristotle's possible intuitionism in ethics; on this, see e.g. Gould (1961).

⁵ Thus for instance in *De an.* III 4, 429^a23.

⁶ The word διάνοια. See *De an.* II 3, 414^b18: τὸ διανοητικόν τε καὶ νοῦς; 415^a8: λογισμὸν καὶ διάνοιαν besides ^a11-12: περὶ δὲ τοῦ θεωρητικοῦ νοῦ; III 3, 427^b13: διανοεῖσθαι. In I 5, 410^b21-24 the terms νοῦς and διάνοια are used without distinction and in III 7, 431^a14-17 Aristotle uses the term νοεῖν in the meaning of διανοεῖσθαι. The terminology, therefore, can only help us to some degree. Thus a table mentioning the places in the *De anima* and other works where Aristotle uses these and related words, and listing the meaning which the term has in each place, would confuse rather than clarify.

⁷ Cf. Ross 20. Especially concerned are the *Topics*, the *Sophistici Elenchi*, the *Prior Analytics*, and the *Posterior Analytics*.

⁸ Ross 38-39.

⁹ Ross, Le Blond, Kapp, Mansion, Oehler, Von Fritz, Tricot (1970), Barnes (1975) B, Guthrie.

¹⁰ Hamlyn.

¹¹ Ross and Von Fritz.

¹² For instance Ross 55, Von Fritz 53 sq. Also some passages from the *E.N.* have led to this interpretation; see *E.N.* I 7, 1098^b3 and VI 3, 1139^b26-31.

¹³ Cf. Von Fritz 40: 'etwas völlig anderes'.

¹⁴ Cf. Brunschwig (1981).

¹⁵ See e.g. Von Fritz 53.

¹⁶ Hamlyn (1959) 140.

¹⁷ E.g. Ross 40, S. Mansion 102, Theiler 142, Rist 509, Guthrie 182.

¹⁸ Nuyens 296; Guthrie 319.

¹⁹ Nuyens 296; Guthrie 182 sqq. and 318 sqq.; Hamlyn (1968) 140-141.

²⁰ Le Blond 134-135; Von Fritz 37-38.

²¹ Oehler 207-208.

Part One: Intuition and discursive reasoning

Chapter 1: Syllogism

¹ On syllogism in Aristotle generally, see Kapp (1931) and (1942). Barnes (1981) 22 distinguishes between inference, deduction, and syllogism; this distinction does not interest us here.

² *An.Pr.* I 1, 24^b18-20: συλλογισμὸς δὲ ἐστὶ λόγος ἐν ᾧ τεθέντων τινῶν ἕτερόν τι τῶν κειμένων ἐξ ἀνάγκης συμβαίνει τῷ ταῦτα εἶναι. In *Top.* I, 1. 100^a25-27 Aristotle presents an almost identical definition. Cf. also *S.E.* 1, 164^b27-165^a2 and *Rhet.* I 2, 1356^b. For the term 'assumption', cf. Von Fritz (1955) 29-32.

³ *An.Pr.* I 1, 24^b20-22.

⁴ See esp. Kapp (1931). See also (1942) 72. And further e.g. Weil 10: 'the very terms used in the definition of the syllogism reek of dialectic'; or Barnes (1975) A 80-81.

⁵ See Kapp (1931) 262-264; 267; 273. The Stoa and also Alexander hold that the syllogism advances knowledge, according to Kapp (1931) 274-276; in n.63 he lists more literature on the subject.

Guthrie 170-172 disagrees with Barnes (1975) A on this point. But he is not aware of the following: that even if the premisses must still be found and the syllogism drawn up, and even if knowledge in this sense or science (ἐπιστήμη) is still far off, yet the questioner in the discussion or the instructor already knows the conclusion and already has knowledge (γνώσις) of the matter concerned. For the terms γνώσις and ἐπιστήμη, see e.g. *An.Post.* I 1. Cf. further Von Fritz (1955) 20-21; Wieland (1962) 98: 'auch Aristoteles selbst hat ja der syllogistischen Methode niemals heuristischen Wert zugesprochen, da es hier nur um eine Methode der Darstellung von schon gefundenen Ergebnissen handelt'; and Düring 88-89, who follows Kapp.

Cf. finally Descartes, *Discours de la méthode* II, AT 17: '...je pris garde que, pour la logique, ses syllogismes et la plupart de ses autres instructions servent plutôt à expliquer à autrui les choses qu'on sait ou même, comme l'art de Lulle, à parler, sans jugement, de celles qu'on ignore, qu'à les apprendre'.

⁶ *An.Pr.* I 4, 25^b32-39.

⁷ The example is from *An.Post.* I 13, 78^a30-38.

⁸ *An.Pr.* I 4, 25^b32-34.

⁹ *An.Pr.* I 4, 26^a21-23.

¹⁰ Cf. Hamelin 179-181; Le Blond 67-70; Tricot (1974) 439 n.2 and 791 n.2. Ross 34 (cf. 29) writes: 'Aristotle's point of view here is largely a quantitative one'.

¹¹ *An.Pr.* I 4-22

¹² *An.Pr.* I 7, 29^b1-2; I 23, 40^b17-20. *An.Post.* I 14, 79^a29-32.

¹³ *Top.* VIII 11, 162^a11; VIII 13, 162^b32; *S.E.* 2, 165^b9; *Met.* Gamma 3, 1005^b4; *E.N.* VI 3, 1139^b27. Cf. Kapp (1931) 264.

Chapter 2: Proposition and premiss

¹ *An.Pr.* I 1, 24^a16-17: Πρότασις μὲν οὖν ἐστὶ λόγος καταφατικός ἢ ἀποφατικός τινος κατὰ τινος. On the term πρότασις, see Kapp (1931) 265: 'das was ich dem Gegner hinstrecke'. The translation 'proposition' gives a better idea of the term's background than the translation 'premiss'. Cf. the use of terms in *Top.* I 10 104^a3-7.

² *An.Pr.* I 1, 24^a23-25.

³ *Top.* I 4, 101^b28-36.

⁴ *Top.* I 4, 101^b13-16.

⁵ *An.Pr.* I 27-30; cf. *Top.* I 13-18.

⁶ *An.Pr.* I 27, 43^a22-24.

⁷ *An.Pr.* I 27, 43^a25-43.

⁸ See *An.Post.* I 19. One cannot go on indefinitely, neither upwards nor downwards.

⁹ See *An.Post.* I 20.

¹⁰ *An.Pr.* I 27, 43^a42-43.

¹¹ *An.Pr.* I 27, 43^b1-5.

¹² *An.Pr.* I 27, 43^b6-8.

¹³ *An.Pr.* I 28, 43^b39-43.

¹⁴ *An.Pr.* I 28, 44^b9-11; 44^b38-45^a1; I 29, 45^b36-46^a2.

¹⁵ *Top.* I 13, 105^a21-23.

¹⁶ *Top.* I 15-17. This is at the same time the context in which the categories should be understood: it is necessary to know in what category a certain statement is made. The significance of the categories, therefore, is in the first place logical, instead of ontological. See Kapp (1920) 244: 'Ursprünglich sind γένη τῶν κατηγοριῶν die Verschiedenheiten der Bedeutung, die der einen sprachlichen Form des Aussagens von einem bestimmten Subjekt in einem Satze unmittelbar innewohnen und durch diese Form verdeckt werden können, so lange die Aufmerksamkeit nicht gerade auf sie gerichtet wird'.

¹⁷ Cf. *An.Post.* I 19, 81^b18-29.

¹⁸ *An.Pr.* I 30, 46^a8-10.

¹⁹ *An.Pr.* I 1, 24^a25-28; ^a25-26: οὐδὲν δὲ διοίσει πρὸς τὸ γενέσθαι τὸν ἐκατέρου συλλογισμόν.

Cf. *An.Pr.* I 4, 25^b26-31; II 23, 68^b9-11. See also Kapp (1931) 266, 268; Weil 303. A. Mansion (1961) 74 writes: 'On doit noter à ce propos, que la différence peut se trouver uniquement dans la valeur de certitude des prémisses, et non dans la forme du raisonnement'. See, finally, Von Fritz 32 and 48.

²⁰ Cf. *An.Pr.* I 27, 43^a22-24 and Weil 303.

²¹ *An.Pr.* I 27, 43^a22-24; cf. *Top.* I 13, 105^a21-22.

Chapter 3: Dialectic and demonstration

¹ *Top.* I 4, 101^b26-36.

² Cf. Kapp (1931) 264.

³ *An.Pr.* I 1, 24^a24-25.

⁴ *An.Pr.* I 1, 24^b10-12; *Top.* I 1, 100^a29-30 and ^b21-23; and esp. I 10, 104^a8-11: ἔστι δὲ πρότασις διαλεκτικὴ ἐρώτησις ἐνδοξος ἢ πᾶσιν ἢ τοῖς πλείστοις ἢ τοῖς σοφοῖς, καὶ τούτοις ἢ πᾶσιν ἢ τοῖς πλείστοις ἢ τοῖς μάλιστα γνωρίμοις, μὴ παράδοξος. On τὰ ἐνδοξά, see Barnes (1980); at p. 498. n. 14 he lists further literature on this subject.

⁵ *Top.* VIII 2, 157^a21-22; ^b32-33.

⁶ See above, ch. 2, n. 19. Cf. Kapp (1931) 264-266.

⁷ *An.Pr.* I 1, 24^a23-24: ὅτι ἡ μὲν ἀποδεικτικὴ λήψις θατέρου μορίου τῆς ἀντιφάσεώς ἐστιν (οὐ γὰρ ἐρωτᾷ ἀλλὰ λαμβάνει ὁ ἀποδεικνύων).

⁸ *An.Pr.* I 1, 24^a30-^b11.

⁹ *An.Pr.* I 1, 24^a23-24; *S.E.* 10, 171^b1-2; *Top.* VI 14, 151^b18-23; VII 5, 154^a24-25; VIII 1, 155^b9-11; *S.E.* 2, 165^b1-3; 11, 172^a11-21.

Cf. Schickert 13: 'Im Bereich der streng beweisenden Schlüsse hat der Gesprächspartner keine eigenständige Funktion mehr'.

¹⁰ *An.Pr.* I 1, 24^a30: ἐὰν ἀληθὴς ᾖ; I 30, 46^a8: κατὰ μὲν ἀλήθειαν. Cf. I 27, 43^b8-9; *Top.* I 14, 105^b30-31.

¹¹ *Top.* I 1, 100^a30-^b21; *An.Pr.* II 16, 64^b35-36.

¹² See n. 9.

Chapter 4: Forms of dialectic

¹ *Top.* I 12, 105^a10-12: Διωρισμένων δὲ τούτων χρὴ διελέσθαι πόσα τῶν λόγων εἶδη τῶν διαλεκτικῶν. ἔστι δὲ τὸ μὲν ἐπαγωγὴ, τὸ δὲ συλλογισμός.

Cf. *Rhet.* I 2, 1356^a. Guthrie 150-155 disregards the fact that Aristotle distinguishes two forms of dialectic. See on the other hand Le Blond; he quotes (p. 20) Alexander *In Top.*: ὁ ἐπακτικός διαλεκτικός.

² *An.Pr.* II 23, 68^b32-35; cf. *An.Post.* I 1, 71^a5-6; *Top.* VIII 1, 155^b29-38; *Rhet.* I 2.

³ See chapter 2.

⁴ See chapter 7.

⁵ *E.N.* VI 3, 1139^b28-29; cf. I 4, 1095^a30-32; *An.Post.* I 18, 81^a40-^b1.

⁶ *Top.* I 12, 105^a16-19; cf. VIII 1, 156^a4-7; VIII 2, 157^a18-20; VIII 14, 164^a12-13.

⁷ *An.Pr.* II 23, 68^b35-37.

Chapter 5: The dialectical syllogism

¹ *An.Pr.* I 1, 24^b10-12: διαλεκτική δὲ πυνθανομένων μὲν ἐρώτησις ἀντιφάσεως, συλλογισμομένων δὲ λῆψις τοῦ φαινομένου καὶ ἐνδόξου.

² Aubenque 286 n.2 is wrong in saying that for Aristotle refutation or criticism is 'le seul usage vraiment légitime de la dialectique'; he neglects to distinguish between the dialectical argument which argues correctly on the basis of uncertain, merely plausible starting-points, and the sophistic argument, in which even the plausibility of the starting-points is deceptive, or in which the syllogistic form is sham (see *Top.* I 1, 100^b23-25); cf. also p. 256 n.5. At p. 294 Aubenque speaks of 'deux sortes de dialectique', but he considers only one of these to be 'la véritable dialectique'.

See on the other hand Le Blond 24-25; p. 25: 'D'autre part il est clair, nous y insisterons en soulignant l'importance donnée aux procédés inductifs et à la recherche de la définition, que la dialectique a pour but de conduire à manifester, dans un certain degré, la nature des choses'.

³ For the term πυνθάνεσθαι and the term ἐρώτησις, which is indissociably connected with the procedure of gaining information, see *Top.* VIII 2, 158^a24-26; VIII 10, 161^a4; VIII 11, 161^b4-5; *S.E.* 12, 172^b12; 15, 171^b1; 16, 175^a19, and other places collected by Bonitz.

⁴ *S.E.* 2, 165^b4-7; 8, 169^b20-29; ^b25: ἔστι δ' ἡ πειραστική μέρος τῆς διαλεκτικῆς. The last passage deals with the distinction between sophistic and dialectical refutation; the sophistic argument is merely a pseudo-argument.

⁵ *An.Pr.* I 1, 24^a25: ἐρώτησις ἀντιφάσεως; cf. ^b10-11; *Top.* I 10, 104^a8-15 and 20-28.

⁶ *Top.* VIII 2, 158^a14-17; cf. VIII 7, 160^a33-34.

⁷ *Top.* I 4, 101^b30-31.

⁸ *Top.* I 10, 104^a4-11: the ἐρώτησις should be ἐνδοξος.

⁹ See the texts from the *S.E.* mentioned in n.4. In *S.E.* 2, 165^b6-7 Aristotle refers to another text for the discussion of the διαλεκτική πειραστική, perhaps to *Met.* Gamma 3-8. The two kinds of refutation correspond to the two kinds of dialectic mentioned in ch. 4: the dialectical syllogism and induction; cf. *Rhet.* II 25, 1403^a: λύει μὲν ἢ δείξας ἢ ἐνστασιν ἐνεργῶν. In the context of this chapter, therefore, we only discuss the first kind of refutation, and do not yet speak about the form of refutation corresponding to induction.

¹⁰ *An.Pr.* I 1, 24^b11: λῆψις τοῦ φαινομένου. The same meaning of φαινόμενον in *Top.* VIII 11, 161^b3-4: μὴ διδοὺς τὸ φαινόμενον. But the term can also indicate semblance and deceit; see *Top.* I 1, 100^b24-25: ἐκ φαινομένων ἐνδόξων μὴ ὄντων δέ, καὶ ὁ ἐξ ἐνδόξων (...) φαινόμενος; 101^a3-4. In that case there is sophistic or eristic, instead of dialectic. On this distinction, see *Top.* I 1 and *S.E.* 2; cf. 8, 169^b18-29; 11. It is not the dialectician's objective to deceive the opponent; cf. Schickert ix note 7, where he disagrees with Chermann on this point.

¹¹ See ch. 2 n. 19

¹² *Rhet.* I 2, 1358^a; cf. *S.E.* 9, 170^a33-36.

¹³ Cf. Schickert 22: 'grundsätzliche Möglichkeiten der Argumentation'; 'Typen oder Arten (Spezies) von Argumenten'. And Le Blond 20: 'des "cadres" d'analyse'.

¹⁴ *Top.* VIII 1, 155^b7-8.

¹⁵ *Top.* VIII 1, 155^b10-12.

¹⁶ *Top.* VIII 1, 155^b9-16; cf. *S.E.* 11, 172^b5-8.

¹⁷ See the final sentence of *Top.* VII and the opening sentence of *Top.* VIII.

¹⁸ *S.E.* 9, 170^a35-36.

¹⁹ *S.E.* 9, 170^a31-38; the dialectician is not competent in every field.

²⁰ *S.E.* 11, 172^a28-31: ... *περί πάντων ἐστι. πᾶσαι γὰρ αἱ τέχναι χρώνται καὶ κοινοὺς τισιν. διὸ πάντες καὶ οἱ ἰδιῶται τρόπον τινὰ χρώνται τῇ διαλεκτικῇ καὶ πειραστικῇ.* Cf. *An. Post.* I 10, 76^a37-38: "Ἔστι δ' ὧν χρώνται ἐν ταῖς ἀποδεικτικαῖς ἐπιστήμαις τὰ μὲν ἴδια ἐκάστης ἐπιστήμης τὰ δὲ κοινά, ...

²¹ *Rhet.* I 1, 1355^a: *περί δὲ συλλογισμοῦ ὁμοίως ἅπαντος τῆς διαλεκτικῆς ἐστὶν ἰδεῖν, ἢ αὐτῆς ὅλης ἢ μέρους τινός, δῆλον ὅτι ὁ μάλιστα τοῦτο δυνάμενος θεωρεῖν, ἐκ τίνων καὶ πῶς γίνεται συλλογισμός, οὗτος καὶ ...*

Rhet. I 4, 1359^b: *ὅτι ἡ ῥητορικὴ σύγκειται μὲν ἐκ τε τῆς ἀναλυτικῆς ἐπιστήμης καὶ τῆς ((...)), ὁμοία δ' ἐστὶ τὰ μὲν τῇ διαλεκτικῇ τὰ δὲ ...* Cf. *S.E.* 11, 172^a34-36: *ἀτέχνως γὰρ μετέχουσι τούτου οὐ ἐντέχνως ἡ διαλεκτικὴ ἐστὶ, καὶ ὁ τέχνη συλλογιστικὴ πειραστικὸς διαλεκτικός; and An. Post.* I 11, 77^a26-35.

²² *Rhet.* I 1, 1355^a; I 2, 1358^a.

²³ Dialectic deals with everything: *Top.* I 1, 100^a19-20; *S.E.* 9, 170^a40: *περί ὅτιοῦν; 172^a28-29: περί πάντων; 172^a39; b⁴. Cf. De part. an.* I 1, 639^a1-10.

²⁴ *S.E.* 11, 172^a11-16: *νῦν δ' οὐκ ἔστιν ὁ διαλεκτικός περί γένος τι ὠρισμένον, οὐδὲ δεικτικός οὐδενός, οὐδὲ τοιοῦτος οἷος ὁ καθόλου. οὔτε γάρ ἐστιν ἅπαντα ἐν ἐνί τινι γένει, οὔτε, εἰ εἴη, οἷον τε ὑπὸ τὰς αὐτάς ἀρχὰς εἶναι τὰ ὄντα. ὥστε οὐδεμία τέχνη τῶν δεικνουσῶν τινα φύσιν ἐρωτητική ἐστιν; An. Post.* I 11, 77^a31-32.

²⁵ *Rhet.* I 4, 1359^b: *ὅσα δ' ἂν τις ἡ τὴν διαλεκτικὴν ἢ ταύτην μὴ καθάπερ ἂν δυνάμεις ἄλλ' ἐπιστήμης πειρᾶται κατασκευάζειν, λήσεται τὴν φύσιν αὐτῶν ἀφανίσας τῷ μεταβαίνειν ἐπισκευάζων εἰς ἐπιστήμης ὑποκειμένων τινῶν πραγμάτων, ἀλλὰ μὴ μόνον λόγων.*

Cf. *S.E.* 11, 172^a15: *dialectic does not belong to τῶν δεικνουσῶν τινα φύσιν; 172^a37-38: its object is οὐ τοιαῦτα ὥστε φύσιν τινὰ εἶναι καὶ γένος ἄλλ' οἷα αἱ ἀποφάσεις, ...; cf. also Met. Gamma 2, 1004^b8-10.*

²⁶ *S.E.* 11, 172^a23-27; cf. *Met. Gamma* 4, 1006^a12-13: *ἂν μόνον τι λέγῃ ὁ ἀμφισβητῶν; Top.* I 1, 100^a20; *An. Pr.* II 20, 66^b 11-12.

²⁷ Cf. *Rhet.* I 1, 1354^a. Only in *Rhet.* I 4, 1359^b (cited in n. 21) does Aristotle explicitly relate dialectic and analytics. See further *An. Post.* I 2, 72^a16-17 in combination with *Met. Gamma* 3, 1005^b2-8. Cf. Le Blond 18; he cites Alexander *In Top.* 30,13 'λογικῶς ἐκвиваυτ ἃ διαλεκτικῶς'. Elsewhere λογικῶς stands opposite to ἀναλυτικῶς; see *An. Post.* I 22, 84^b2. However, here the meaning of the latter term has been narrowed down to ἀποδεικτικῶς, i.e. ἐκ τῶν χειμένων; see *An. Post.* I 32, 88^a19 and 30.

²⁸ *Met. Gamma* 2, 1003^b35-36; 1004^a9-22; cf. further 1004^b1-4 and ^b27-1005^a18.

²⁹ *Met. Gamma* 2, 1004^a18-19: *καὶ ὅσα ἄλλα λέγεται ἢ κατὰ ταῦτα ἢ κατὰ πλῆθος καὶ τὸ ἐν; a science always studies a thing and its opposite, see 1004^a9-11.*

³⁰ *Met. Gamma* 2. 1003^b22-34; ^b22-24: *εἰ δὴ τὸ ὄν καὶ τὸ ἐν ταῦτόν καὶ μία φύσις τῷ ἀκολουθεῖν ἀλλήλοις ὥσπερ ἀρχὴ καὶ αἷτιον ...*

³¹ *Met. Gamma* 2, 1004^b5-6: *ἐπεὶ οὖν τοῦ ἐνός ἢ ἐν καὶ τοῦ ὄντος ἢ ὄν ταῦτα καθ' αὐτὰ ἐστὶ πάθος ...*

³² *Met. Gamma* 2, 1004^b15-17: *... καὶ ταῦτ' ἐστὶ περί ὧν τοῦ φιλοσόφου ἐπισκέψασθαι τὸ ἀληθές.*

³³ *Met. Gamma* 2, 1004^b17-26; ^b25-26; *ἔστι δὲ ἡ διαλεκτικὴ πειραστικὴ περί ὧν ἡ φιλοσοφία γνωριστική; for the term γνωριστική, cf. ch. 9 n. 80.*

³⁴ *Met. Gamma* 2, 1004^b20: *... περί ἁπάντων, κοινὸν δὲ πᾶσι τὸ ὄν ἐστιν; cf. 1004^a34-b¹: ... καὶ ἐστὶ τοῦ φιλοσόφου περί πάντων δύνασθαι θεωρεῖν.*

³⁵ οὐσία is translated as 'entity', not as 'substance'. Cf. Owens, who also translates 'entity'. Οὐσία has two meanings, one of which cannot be properly rendered by 'substance'; cf. *Met. Eta* 3, 1044^a10-11, the distinction between ἡ μετὰ τῆς ὕλης οὐσία and ἡ κατὰ τὸ εἶδος οὐσία.

³⁶ *Met. Gamma* 2, 1003^b15-19; 1004^a31-b¹; 1005^a13-18; *Gamma* 3, 1005^a19-22: *Λεκτέον δὲ πότερον μιᾶς ἢ ἐτέρας ἐπιστήμης περί τε τῶν ἐν τοῖς μαθήμασι καλουμένων ἀξιωματῶν καὶ περί τῆς οὐσίας. φανερόν δὴ ὅτι μιᾶς τε καὶ τῆς τοῦ φιλοσόφου καὶ ἡ περί τούτων ἐστὶ σχέσις; 1005^b5-11: ὅτι μὲν οὖν τοῦ φιλοσόφου καὶ τοῦ περί πάσης τῆς οὐσίας θεωροῦντος, ἡ πέφυκεν, καὶ περί τῶν συλλογιστικῶν ἀρχῶν ἐστὶν ἐπισκέψασθαι, δῆλον. προσήκει δὲ τὸν*

μάλιστα γνωρίζοντα περὶ ἑκάστων γένος ἔχειν λέγειν τὰς βεβαιωτάτας ἀρχὰς τοῦ πράγματος, ὥστε καὶ τὸν περὶ τῶν ὄντων ἢ ὄντα τὰς πάντων βεβαιωτάτας.

³⁷ *Met.* Gamma 1, 1003^a26-28: ἐπεὶ δὲ τὰς ἀρχὰς καὶ τὰς ἀκροτάτας αἰτίας ζητοῦμεν, δῆλον ὡς φύσεώς τινος αὐτὰς ἀναγκαῖον εἶναι καθ' αὐτήν.; cf. *Met.* Gamma 2, 1003^a33-34; ^b12-14.

³⁸ *Met.* Gamma 1, 1003^a23-26; Gamma 2, 1004^a2-9: philosophy itself, on the other hand, does have parts. Cf. *Top.* I 14, 105^b19-25: the discipline of logic (^b21: λογικαί) is a discipline on equal terms with ethics and physics.

³⁹ See notes 24 and 25.

⁴⁰ *Met.* Gamma 3, 1005^b5-11; ^b7: περὶ τῶν συλλογιστικῶν ἀρχῶν; ^b10-11: περὶ τῶν ὄντων ἢ ὄντα. See also *Met.* Beta 1, 995^b8-10; ^b20-25; Beta 2, 996^b26-31. These axioms belong to the attributes of being as being; see *Met.* Gamma 3, 1005^a19-29; ^a27-28: ὥστε ἐπεὶ δῆλον ὅτι ἢ ὄντα ὑπάρχει πάσι (τοῦτο γὰρ αὐτοῖς τὸ κοινόν).

⁴¹ *Met.* Beta 1, 995^b6-10 and ^a18-27.

⁴² *Met.* Beta 2, 996^b33-997^a5; ^a2-5: ἀμα δὲ καὶ τίνα τρόπον ἔσται αὐτῶν ἐπιστήμη; τί μὲν γὰρ ἑκάστων τούτων τυγχάνει ὃν καὶ νῦν γνωρίζομεν (χρῶνται γοῦν ὡς γινγνωσκόμενοι αὐτοῖς καὶ ἄλλαι τέχναι).

⁴³ *Met.* Beta 2, 997^a11-15.

⁴⁴ *Met.* Beta 2, 997^a5-11.

⁴⁵ *Met.* Gamma 2, 1004^b25-26: περὶ ὧν ἡ φιλοσοφία γνωριστική. Cf. *Met.* Alpha 1, 981^b5-10.

⁴⁶ *Met.* Gamma 4, 1006^a3-13; ^a5-6: ἀξιοῦσι δὴ καὶ τοῦτο ἀποδεικνύειν τινὲς δι' ἀπαίδευσιν.; ^a11-13: ἔστι δ' ἀποδείξει ἐλεγκτικῶς καὶ περὶ τούτου ὅτι ἀδύνατον, ἂν μόνον τι λέγῃ ὁ ἀμφισβητῶν. The rest of *Met.* Gamma deals with the refutation. Cf. *An.Post.* I 11, 77^a10-25.

Owens 285 writes: 'To the science of Entity (formal cause) pertains the function of establishing the most fundamental of all axioms, the principle of contradiction'. He fails to recognize here, it seems, that one can only refute the person who denies this principle, and that one can therefore only apply a dialectical procedure, so that it is problematical to speak of 'science' and 'establishing' in this context.

⁴⁷ *An.Post.* I 11, 77^a26-32.

⁴⁸ Cf. *Met.* Beta 4; 1001^a4-8: Πάντων δὲ καὶ θεωρησά χαλεπώτατον καὶ πρὸς τὸ γινῶναι τάληθες ἀναγκαιότατον πότερον ποτε τὸ ὄν καὶ τὸ ἐν οὐσίαι τῶν ὄντων εἰσί, καὶ ἑκάτερον αὐτῶν οὐχ ἑτέρον τι ὄν τὸ μὲν ἐν τὸ δὲ ὄν ἐστίν, ἢ δεῖ ζητεῖν τί ποτ' ἐστὶ τὸ ὄν καὶ τὸ ἐν ὡς ὑποκειμένης ἄλλης φύσεως.

As this passage makes clear, Aristotle distinguishes from the outset between the concepts of οὐσία and τὸ ὄν. Cf. Gamma 2, 1003^b30-34; 1004^b5-10: ἐπεὶ οὖν τοῦ ἐνός ἢ ἐν καὶ τοῦ ὄντος ἢ ὄν ταῦτα καθ' αὐτὰ ἐστὶ πάθη, ἀλλ' οὐχ ἡ ἀριθμοὶ ἢ γραμμαὶ ἢ πῦρ, δῆλον ὡς ἐκείνης τῆς ἐπιστήμης καὶ τί ἐστὶ γνωρίσαι καὶ τὰ συμβεβηκότ' αὐτοῖς. καὶ οὐ ταύτη ἀμαρτάνουσιν οἱ περὶ αὐτῶν σκοποῦμενοι ὡς οὐ φιλοσοφοῦντες, ἀλλ' ὅτι πρότερον ἢ οὐσία, περὶ ἧς οὐθὲν ἐπαίουσιν.

The dialecticians (^b9: οὐ φιλοσοφοῦντες; cf. ^b19 and Beta 1, 995^b22-24) do discuss the attributes of being as being, but neglect to discuss οὐσία, though it is more fundamental. This is also the background of Gamma 1, 1003^a26-28: ἐπεὶ δὲ τὰς ἀρχὰς καὶ τὰς ἀκροτάτας αἰτίας ζητοῦμεν, δῆλον ὡς φύσεώς τινος αὐτὰς ἀναγκαῖον εἶναι καθ' αὐτήν.

Aristotle's search (*Met.* Alpha 2, 982^a4; Beta 1, 995^a24) in the *Metaphysics* is for a science which deserves the name of 'wisdom' and which has as its object certain principles or causes (*Met.* Alpha 1, 982^a1- Alpha 2, 982^a6). In *Met.* Beta and Gamma he discusses among other things two kinds of principles which are possibly the object of such a science. These are on the one hand axioms, for they are universal and belong to being as being. On the other hand it is οὐσία, the concrete being or thing which has actuality. Next Aristotle makes a number of observations: the dialecticians and the philosophers are concerned with the same subject, but not in the same way: the dialectician criticizes or refutes; the philosopher expounds (*Met.* Gamma 2, 1004^b15-26); the dialecticians fail to recognize that this subject, the axioms or κοινά, presupposes οὐσία (*Met.* Gamma 2, 1004^b5-10); yet a philosophical, demonstrative exposition does not appear to be possible with regard to the κοινά (*Met.* Gamma 4, 1006^a5-11); only a (dialectical) refutation of whoever denies the truth of a principle here is possible (1006^a11-13).

A shift takes place, therefore, in the positions of the dialectician and the philosopher. In the end the object of the science sought after (philosophy) turns out to be entirely different from the object of dialectic; only οὐσία is suited to be such an object. Thus dialectic must relinquish the privileged position which it had as a universal science to the various disciplines, each of which has a kind of οὐσία as its object. Subsequently, the highest science is universal only in that its object is a kind of οὐσία on which all other kinds of οὐσία depend (*Met.* Epsilon 1, 1026^a29-32); this science is First Philosophy or Theology. There is thus a revaluation of the special sciences at the expense of dialectic and its pretensions. The problem which arises now, however, is that the object of the science which Aristotle is looking for is no longer κοινόν or καθόλου, whereas science must still have the universal as its object, according to Aristotle (*Met.* Beta 6, 1003^a5-15; cf. Iota 2, 1053^b16 sqq.).

⁴⁹ *Top.* I 2.

⁵⁰ *Top.* I 2 101^a28-30; cf. VIII 5 and 11.

⁵¹ *Top.* I 2 101^a30-34; cf. *Rhet.* I 1, 1355^a.

⁵² *Top.* I 2 101^a34-36.

⁵³ *Top.* I 2, 101^a36-^b4: ἔτι δὲ πρὸς τὰ πρῶτα τῶν περὶ ἑκάστην ἐπιστήμην. ἐκ μὲν γὰρ τῶν οἰκειῶν τῶν κατὰ τὴν προτεθείσαν ἐπιστήμην ἀρχῶν ἀδύνατον εἰπεῖν τι περὶ αὐτῶν, ἐπειδὴ πρῶται αἱ ἀρχαὶ ἀπάντων εἰσὶ, διὰ δὲ τῶν περὶ ἑκάστα ἐνδόξων ἀνάγκη περὶ αὐτῶν διελθεῖν. τοῦτο δ' ἴδιον ἢ μάλιστα οἰκεῖον τῆς διαλεκτικῆς ἐστίν. ἐξεταστικὴ γὰρ οὐσα πρὸς τὰς ἀπασῶν τῶν μεθόδων ἀρχὰς ὁδὸν ἔχει.

⁵⁴ *Top.* I 2, 101^b2-4.

⁵⁵ See for instance *An. Post.* I-21, 82^b35: λογικῶς, opposite I 22, 84^a8: ἀναλυτικῶς; also I 32, 88^a19: λογικῶς, opposite 88^a30: ἐκ τῶν κειμένων; and *E.N.* I 8, 1098^b9-11; *Met.* Alpha 2, 982^a6-7; Zeta 4, 1029^b13 opposite 1030^a28; *De an.* I 1, 402^b23: ἀποδιδόναι κατὰ τὴν φαντασίαν in combination with *An. Pr.* I 1, 24^b11-12: λήψις τοῦ φαινομένου καὶ ἐνδόξου.

⁵⁶ Cf. *An. Pr.* I 1 and *Top.* I 1.

Chapter 6: Induction

¹ *Top.* I 12.

² *Top.* I 12, 105^a13-14: ἐπαγωγὴ δὲ ἡ ἀπὸ τῶν καθ' ἑκάστα ἐπὶ τὸ καθόλου ἔφοδος.

³ *Top.* I 12, 105^a14-16.

⁴ *Top.* I 12, 105^a10-11: α λόγος διαλεκτικός.

⁵ See ch. 2 note 19.

⁶ See ch. 1.

⁷ *Top.* I 18, 108^b10-11: διότι τῇ καθ' ἑκάστα ἐπὶ τῶν ὁμοίων ἐπαγωγῇ τὸ καθόλου ἀξιοῦμεν ἐπάγειν.; cf. *Top.* I 14, 105^b27-29. For the origin of the use of ἐπαγωγῇ as a technical term, see Kapp 75-76 and Ross (1949), 481-483.

For my definition of induction in Aristotle, cf. Schickert 7. He calls induction 'Konkretisierung und Spezialisierung'; cf. p. 10: 'weil dabei vom Allgemeinen zum Besonderen, vom Genus zu den Spezies fortgeschritten wird'. In induction one tries to find applications of the general rule. On the basis of these applications one goes on to construct the argument; only in this sense does one proceed from the particular to the universal (cf. *Top.* I 12, 105^a13). Similarly, one might say, the syllogism (deduction) is an argument on the basis of the universal, whereas in deduction the particular is already known and the universal (by which the particular is to be established) must still be found (cf. *An. Post.* II 2, 90^a24: ἐστὶ τοῦ μέσου ἡ ζήτησις).

⁸ *Top.* VIII.

⁹ *Top.* VIII 1, 155^b34-35: ἂν δὲ μὴ τιθῇ, δι' ἐπαγωγῆς ληπτέον προτείνοντα ἐπὶ τῶν κατὰ μέρος ἐναντίων.

¹⁰ *Top.* VIII 1, 157^a6-7: εἰς δὲ κόσμον.

¹¹ *Top.* VIII 2, 157^a34-35: "Ὅταν δ' ἐπάγοντος ἐπὶ πολλῶν μὴ διδῶ τὸ καθόλου, τότε δίκαιον ἀπαιτεῖν ἔνστασιν. For ἔνστασις, cf. *An. Pr.* II 26.

¹² *Top.* VIII 2, 157^b1-2: δεῖ γὰρ τὸν ἐνιστάμενον ἐφ' ἑτέρου τὴν ἔνστασιν φέρειν.

¹³ *Top.* VIII 2, 157^b32-33: διαλεκτική γάρ ἐστι πρότασις πρὸς ἣν οὕτως ἐπὶ πολλῶν ἔχουσιν μὴ ἔστιν ἔνστασις. Vgl. VIII 8, 160^b3-5: εἰ οὖν ἐπὶ πολλῶν φαινομένων μὴ δίδωσι τὸ καθόλου, μὴ ἔχων ἔνστασιν, φανερόν ὅτι δυσκολαίνει.

¹⁴ *An.Pr.* II 23.

¹⁵ *An.Pr.* II 23, 68^b15-16: ὁ ἐξ ἐπαγωγῆς συλλογισμὸς.

¹⁶ *An.Pr.* II 23, 68^b13-14: ἅπαντα γὰρ πιστεύομεν ἢ διὰ συλλογισμοῦ ἢ ἐξ ἐπαγωγῆς.

¹⁷ *An.Pr.* II 23, 68^b18-23.

¹⁸ *An.Pr.* II 23, 68^b15-18.

¹⁹ *An.Pr.* II 23, 68^b23: εἰ οὖν ἀντιστρέφει τὸ Γ τῷ Β.

²⁰ *An.Pr.* II 23, 68^b23-24: καὶ μὴ ὑπερτείνει τὸ μέσον.

²¹ *Top.* VIII 2, 157^b32-33 (cited in note 13).

²² *An.Pr.* II 23, 68^b27-29: δεῖ δὲ νοεῖν τὸ Γ τὸ ἐξ ἀπάντων τῶν καθ' ἕκαστον συγκείμενον. ἡ γὰρ ἐπαγωγή διὰ πάντων. Cf. II 24, 69^a17: ἐξ ἀπάντων τῶν ἀτόμων and *Top.* VIII 1, 156^b14-17; ^b16-17: τὸ καθόλου ὅφ' ὃ πάντα τὰ ὁμοία ἐστίν.

²³ *An.Pr.* II 23, 68^b32-35.

²⁴ These are potentially convertible as long as the opponent fails to produce an objection and counter-example. The logical status of induction becomes a problem only when one removes it from the context of the discussion, when one loses sight of the close relation between induction and the possibility of bringing forward objections, and one starts to regard induction as a means of establishing conclusively the universal on the basis of the particular. This is what e.g. Hamelin 258 does: 'Puisqu' Aristote ne prend pas au sérieux la possibilité d'une énumération complète des faits qui tombent sous la loi, il reste à se demander comment il conçoit, dans le réalité de la vie logique de l'esprit, le passage du particulier à l'universel'. And: 'il faut dire qu'il n'a pas résolu le problème, ou plutôt qu'il ne l'a même pas posé'; See further n.28 and ch. 10 n.4.

²⁵ *Top.* VIII 2, 157^a21-24; ^a23-24: ἀλλ' ὅταν δέη τὸ καθόλου λαβεῖν, "οὕτως ἐπὶ πάντων τῶν τοιοῦτων" φασίν.

²⁶ See n. 11.

²⁷ *An.Pr.* II 23, 68^b27: δεῖ δὲ νοεῖν.

For the term νοεῖν, in the sense of 'to conceive (as)', 'to imagine (as)', cf. *Met.* Alpha 9, 991^b27: ὁμολογούμενα τῇ νοήσει; Epsilon 4, 1027^b23: πῶς δὲ τὸ ἄμα ἢ τὸ χωρὶς νοεῖν συμβαίνει; Zeta 12, 1038^a33-34: πῶς γὰρ δεῖ νοῆσαι τὸ μὲν ὕστερον τὸ δὲ πρότερον; Mu 9, 1086^b4-5: καὶ τοῦτο ὀρθῶς ἐνόησεν οὐ χωρίσας; *Phys.* II 2, 193^b34: χωριστὰ γὰρ τῇ νοήσει κινήσεώς ἐστι.

²⁸ Cf. the use which Aristotle makes of induction in the *Metaphysics*; he never enumerates all the possible appropriate cases. See e.g. *Met.* Delta 29, 1025^a9 sqq.; Epsilon 1, 1025^b4-16; Iota 3, 1054^b32 sqq.; etc; further e.g. *Top.* I 8, 103^b1-6; I 14, 105^b27-29.

Hamelin 257 states correctly: 'Pour ce qui est de l'énumération qui constitue le moyen du syllogisme inductif, c'est par fiction, on n'en peut douter, qu'Aristote l'a considérée comme complète'. And Le Blond 127: 'au milieu de son étude des raisonnements où les termes sont substituables, il a remarqué que si l'on formule en syllogisme l'opération inductive, elle ne peut revêtir une forme logique que si l'on pose l'égalité d'extension entre les termes. Il ne veut pas dire par là, semble-t-il, que c'est la constatation de l'égalité d'extension qui est le ressort réel de l'induction'; Moreau (1962) 43: 'l'universel découvert par l'induction est seulement présumé, et non garanti'; and in relation to *An.Pr.* II 23 he writes: 'Dans l'exemple célèbre de syllogisme inductif donné *Anal.Prior.* II 23, 68^b15-29, il n'est pas garanti que l'homme, le cheval et le mulet constituent l'universalité des animaux sans fiel'; this is also the view of Engberg-Pedersen (1979) 312-313 and Hintikka (1980) 427 sqq. Von Fritz (1964) holds a different view. See further ch. 10.

²⁹ Cf. *An.Post.* I 4, 73^b32-37: τὸ καθόλου δὲ ὑπάρχει τότε, ὅταν ἐπὶ τοῦ τυχόντος καὶ πρώτου δεικνύηται. For the term τυγχάνω, indicating that one may take any suitable case whatsoever, see *An.Post.* I 1, 71^a17-19; *An.Pr.* II 21, 67^a39-b3.

³⁰ That is why it is sometimes useful to refrain from asking explicitly, and perhaps in vain, for the opponent's approval; see *S.E.* 15, 174^a33-37.

³¹ *An. Pr.* II 24: παράδειγμα. Sometimes Aristotle does link up ἐπαγωγή and παράδειγμα; see *An. Post.* I 1, 71^a9-11, which deals, however, with rhetorical instead of dialectical induction (cf. *Rhet.* I 2, 1356^b). In *Top.* I 14, 105^b27-29 Aristotle does not use the term παράδειγμα in the technical sense referred to in *An. Pr.* II 24.

³² *An. Pr.* II 24, 68^b38-39.

³³ *An. Pr.* II 24, 69^a5-7.

³⁴ *An. Pr.* II 24, 69^a13-16; ^a15: ὡς μέρος πρὸς μέρος.

³⁵ *An. Pr.* II 24, 69^a16-19.

³⁶ See ch. 4 note 1.

³⁷ See the discussion of *An. Pr.* II 23 above.

³⁸ *An. Post.* II 7, 92^a37-^b1: οὐθ' ὡς ὁ ἐπάγων διὰ τῶν καθ' ἕκαστα δῆλον ὄντων, ὅτι πᾶν οὕτως τῷ μηδὲν ἄλλως ((δῆλον ποιήσει)). οὐ γὰρ τί ἐστι δείκνυσιν, ἀλλ' ὅτι ἔστιν ἢ οὐκ ἔστιν.

Cf. *An. Post.* I 5, 74^a25-32: even complete induction would not yield insight into the essence; ^a29-30: οὐδ' εἰ μηδὲν ἐστι παρὰ ταῦτα τρίγωνον ἕτερον.; cf. I 13, 78^a30-38; *E.N.* I 4, 1095^a30-^b8.

³⁹ *An. Post.* I 2, 71^b9-19.

⁴⁰ *An. Pr.* II 23, 68^b30-32: ἔστι δ' ὁ τοιοῦτος συλλογισμὸς τῆς πρώτης καὶ ἀμέσου προτάσεως. ὦν μὲν γὰρ ἔστι μέσον, διὰ τοῦ μέσου ὁ συλλογισμὸς, ὦν δὲ μὴ ἔστι, δι' ἐπαγωγῆς.

Cf. *Top.* I 2, 101^a36-^b3; *E.N.* VI 3, 1139^b26-31. There seems no reason for assuming that different kinds of induction are concerned in the *An. Pr.*, *Top.*, and *E.N.*; but see also ch.9 and 10.

⁴¹ *Top.* VIII 1, 155^b29-37.

⁴² *Top.* I 12, 105^a16-19. Cf. *Top.* VIII 1, 156^a4-7; VIII 2, 157^a18-20; VIII 14, 164^a12-13; τὴν δὲ γυμνασίαν ἀποδοτέον. τῶν μὲν ἐπακτικῶν πρὸς νέον, τῶν δὲ συλλογιστικῶν πρὸς ἔμπειρον. For the term ἔμπειρος, cf. *E.N.* I 2, 1095^a2-4. See further *An. Pr.* II 23, 68^b35-37.

⁴³ Cf. *Top.* I 2, 101^a36-^b3. See the use which Aristotle himself makes of induction in his enquiries; see the places mentioned at note 28 and also: *Met.* Theta 6, 1048^a35-37; *E.N.* I 4, 1095^a30-^b8; *Phys.* I 1; *De an.* I 1, 402^b22-25.

⁴⁴ *An. Pr.* II 23, 68^b15-17: τὸ διὰ τοῦ ἐτέρου θάτερον ἄκρον τῷ μέσῳ συλλογίσασθαι.

Cf. Schickert 10: 'der Frager geht nach wie vor in seinem Kalküll von einem generellen Satz aus, zu dem er den Antworter mittels spezieller Fragen hinzuführen sucht'. Cf. on the other hand Le Blond 30. In relation to the induction mentioned at *An. Post.* II 19, he writes: 'soit que l'induction finisse par être ramenée, en dernière analyse, à l'intuition infaillible qui met en possession des principes' (my italics); the same view is found in e.g. Leshner (1973) 62: 'supplies us with our knowledge of first principles'; Kahn (1981) 385; etc. On this problem, see ch. 9 and 10.

⁴⁵ *Top.* I 2, 101^a36-^b3; see esp. ^b2: διελεῖν.

⁴⁶ See ch. 4 n. 1 and 2; cf. *An. Pr.* II 23, 68^b9-14; *An. Post.* I 1, 71^a1-11 (cited in note 47); II 7, 92^a34-^b2.

⁴⁷ *An. Post.* I 1, 71^a1-9: Πᾶσα διδασκαλία καὶ πᾶσα μάθησις διανοητικὴ ἐκ προϋπαρχούσης γίνεται γνώσεως. φανερόν δὲ τοῦτο θεωροῦσιν ἐπὶ πασῶν. αἱ τε γὰρ μαθηματικαὶ τῶν ἐπιστημῶν διὰ τούτου τοῦ τρόπου παραγίνονται καὶ τῶν ἄλλων ἐκάστη τεχνῶν. ὁμοίως δὲ καὶ περὶ τοῦς λόγους οἱ τε διὰ συλλογισμῶν καὶ οἱ δι' ἐπαγωγῆς. ἀμφοτέροι γὰρ διὰ προγινωσκομένων ποιοῦνται τὴν διδασκαλίαν, οἱ μὲν λαμβάνοντες ὡς παρὰ ξυνιέντων, οἱ δὲ δεικνύντες τὸ καθόλου διὰ τοῦ δῆλον εἶναι τὸ καθ' ἕκαστον. The same in *Met.* Alpha 9, 992^b30-33; *E.N.* VI 3, 1139^b26-31.

⁴⁸ Cf. *An. Post.* II 7, 92^a35.

⁴⁹ See ch. 3 n. 7-11.

Chapter 7: The demonstrative syllogism

¹ See ch. 2 note 19; cf. *An. Post.* I 2, 71^b23-24.

² See ch. 2 note 18; cf. *An. Pr.* I 1, 24^a30-^b10 and *Top.* I 1, 100^a27-29.

³ *An. Post.* I 2, 71^b20-21: ἐξ ἁληθῶν; cf. ^b25-26.

⁴ *An. Post.* I 2, 72^a9-11.

⁵ *An. Post.* I 2, 71^b21: πρώτων; ^b26-29. Aristotle works this out in detail in *An. Post.* I 13-17.

⁶ *An. Post.* I 2, 71^b21: ἀμέσων; ^b27: ἀναποδείκτων; 72^a7-8: ἀρχὴ δ' ἐστὶν ἀποδείξεως πρότασις ἄμεσος, ἄμεσος δὲ ἥς μὴ ἔστιν ἄλλη προτέρα.

⁷ *An. Post.* I 2, 71^b21: γνωριμωτέρον; ^b29-72^a5; cf. 72^a25-b4.

⁸ *An. Post.* I 2, 71^b22: προτέρων καὶ αἰτίων τοῦ συμπεράσματος; ^b29-72^a5.

⁹ *An. Post.* I 2, 71^b22-23: οἰκείαι τοῦ δεικνυμένου; cf. 72^a5-7.

¹⁰ *An. Post.* I 2, 72^a14-17: 'Αμέσου δ' ἀρχῆς συλλογιστικῆς θέσιν μὲν λέγω ἣν μὴ ἔστι δείξαι, μηδ' ἀνάγκη ἔχειν τὸν μαθησόμενον τι. ἦν δ' ἀνάγκη ἔχειν τὸν ὅτι οὖν μαθησόμενον, ἀξίωμα. On axioms, cf. I 10, 76^b20-21: ὥσπερ οὐδὲ τὰ κοινὰ οὐ λαμβάνει τί σημαίνει τὸ ἴσα ἀπὸ ἴσων ἀφελῆν, ὅτι γνώριμον.; *Met.* Beta 2, 997^a2-5; ^a4: καὶ νῦν γνωρίζομεν (cf. ch. 5 n. 24); Gamma 3, 1005^b15-17. On axioms, see also ch. 5. On the distinction between axioms and the principles proper to a certain science, see Le Blond 112-114. Cf. further Kahn (1981) 390-391; he suggests wrongly that *An. Post.* II 19 is also concerned with the way in which we come to know axioms. Against this view, see the passages cited and mentioned above and further ch. 10 n. 33 and Aubenque (1962) 132 n. 2.

¹¹ *An. Post.* I 2, 72^a18-20; ^a18: ὅποτερον οὖν τῶν μορίων; cf. 72^a9-10: διαλεκτικὴ μὲν ἡ ὁμοίως λαμβάνουσα ὅποτερον οὖν; I 3, 72^b13-15 and I 10, 76^b28-29: ταῦτ', ἐὰν μὲν δοκοῦντα λαμβάνῃ τῷ μαθάνοντι, ὑποτίθεται.

It is therefore wrongly supposed by e.g. Kahn (1981) 391 that hypotheses are broadly 'the existence claims corresponding to the primary definitions'.

However, in *An. Post.* I 10, 76^b29 and ^b35 sqq. the hypothesis in the absolute sense is discussed (76^b29: ἀπλῶς ὑπόθεσις); here the hypothesis is the fundamental proposition related to reality in a scientific argument; cf. I 19, 81^b14-15: αἱ μὲν ἀρχαὶ καὶ αἱ λεγόμεναι ὑποθέσεις αὗται εἰσι. What the dialectical hypothesis has in common with the hypothesis in the absolute sense is that it says something about reality; in this it differs from the definition. See I 10, 76^b35-36: οἱ μὲν οὖν ὅροι οὐκ εἰσὶν ὑποθέσεις (οὐδὲν γὰρ εἶναι ἡ μὴ λέγεται). For the distinction between two meanings of 'hypothesis', cf. Von Fritz (1955) 37.

It is confusing that in I 19 Aristotle uses the term ὅρος synonymously with hypothesis, whereas in I 10 he contrasts the two. But in the latter case Aristotle is referring to ὅρος in the sense of 'definition'; as such it is not concerned with reality and to that extent, therefore, it cannot be a principle of science either. The view of some scholars (Mignucci, Rolfes, Barnes) that ὅροι (76^b35) means 'terms' instead of 'definitions' is not tenable; see Verdenius (1981) 349. I am not convinced by the detailed argumentation which Von Fritz (1955) 40 advances in favour of the translation 'terms'; he does not take sufficiently into account the meaning which ὅρος has in 72^b35 and 81^b10 and fails to recognize the purport of the term ξυνιέναι (76^b37; cf. 71^a7 and 13). In his view 'dasz Aristoteles nicht der Meinung gewesen sein kann, dasz Definitionen überhaupt nicht als Prämissen von Beweisen gebraucht werden können', he pays too little attention to the meaning of *An. Post.* II 7 (see ch. 8). In disagreement with Von Fritz are Kullmann (1974) 177 n. 40 and S. Mansion 325 n. 46.

Barnes (1975) B *ad loc.* says: 'definitions at A 2, 72^a20-4 are species of thesis, and hence are propositions; but *horoi* are here distinguished from suppositions by the fact that suppositions are propositions'. 'And hence are propositions' cannot be maintained. Barnes too fails to recognize that in this passage (76^b35-39) Aristotle is concerned with true statements related to reality.

¹² *An. Post.* I 2, 72^a10-11: ἀποδεικτικὴ δὲ ἡ ὠρισμένως θάτερον, ὅτι ἀληθές. On the distinction between the argument which starts from a (dialectical) hypothesis and the scientific argument, see *An. Pr.* I 23, 40^b23-26 and 41^a22-26; I 44, 50^a16-19; *An. Post.* I 22, 83^b38-84^a1; II 6.

¹³ *An. Post.* I 4, 73^a21-23; cf. I 2, 71^b9-16.

¹⁴ *An. Post.* I 4, 73^a24: ἐξ ἀναγκαίων.

¹⁵ *An. Post.* I 4, 73^a24-27; ^a26-27: κατὰ παντὸς, καθ' αὐτὸ, καθόλου.

¹⁶ *An. Post.* I 4, 73^a34-38.

¹⁷ *An. Post.* I 4, 73^a37: τί ἐστιν.

¹⁸ *An. Post.* I 4, 73^a28-34; the example is from 73^b25 sqq.

¹⁹ *An. Post.* I 4, 73^b25-27.

²⁰ *An. Post.* I 4, 73^b32-33: τὸ καθόλου ὑπάρχει τότε, ὅταν ἐπὶ τοῦ τυχόντος καὶ πρώτου δεικνύηται.

²¹ *An. Post.* I 5, 74^a37-b₄; a₃₇-38: ὅταν ἀφαιρουμένων ὑπάρχει πρώτη.

²² *An. Post.* I 6, 74^b13-15.

²³ *An. Post.* I 6, 74^b15-18.

²⁴ *An. Post.* I 6, 74^b24-26; b₂₅-26; καὶ ἀληθὲς οὐ πᾶν οἰκεῖον.

²⁵ *An. Post.* I 7; cf. I 28.

²⁶ *An. Post.* I 9, 75^b37-76^a3.

²⁷ *An. Post.* I 9, 76^a16-17: φανερόν καὶ ὅτι οὐκ ἔστι τὰς ἐκάστου ἰδίας ἀρχὰς ἀποδείξαι.

²⁸ *An. Post.* I 9, 76^a17-18: ἔσονται γὰρ ἐκεῖναι ἀπάντων ἀρχαί, καὶ ἐπιστήμη ἡ ἐκεῖνων κυρία πάντων. Cf. Aubenque (1962) 216-219. He writes on p. 219: 'L'argumentation ((in this passage)) n'a plus aucun sens si elle ne présuppose l'impossibilité de la science universelle'; cf. Ross (1949) 537 *ad loc.* Tricot (1970) 52 n. 4 fails to recognize this; so, it seems, does Barnes (1975) B 133.

²⁹ *An. Post.* I 7, 75^a38: οὐκ ἄρα ἔστιν ἐξ ἄλλου γένους μεταβάντα δείξαι.

³⁰ On this, see ch. 5.

³¹ Plato *Resp.* VI 511 b-e; 511 c5: ὑπὸ τῆς τοῦ διαλέγεσθαι ἐπιστήμης. Cf. VII 532 a-b; 533 c-d; 534 b3-4: Ἡ καὶ διαλεκτικὸν καλεῖς τὸν λόγον ἐκάστου λαμβάνοντα τῆς οὐσίας. Cf. De Vogel (1974²) 91-92 and 99-101.

³² See ch. 5 n. 48.

³³ See *Met.* Gamma 2, 1004^b5-10 (cited ch. 5 n. 48). One might add that in *Met.* Epsilon 1, 1026^a31-32 Aristotle no longer contrasts the expression τὸ ὄν ἢ ὄν with the term οὐσία.

³⁴ *Met.* Gamma 2, 1003^b26-29. Cf. Iota 2, 1053^b20-21: τὸ γὰρ ὄν καὶ τὸ ἐν καθόλου κατηγορεῖται μάλιστα πάντων.

³⁵ *Met.* Epsilon 1, 1026^a10-32; a₂₃-31: ἀπορήσειε γὰρ ἂν τις πότερόν ποθ' ἢ πρώτη φιλοσοφία καθόλου ἐστὶν ἢ περὶ τι γένος καὶ φύσιν τινὰ μίαν (οὐ γὰρ ὁ αὐτὸς τρόπος οὐδ' ἐν ταῖς μαθηματικαῖς, ἀλλ' ἢ μὲν γεωμετρία καὶ ἀστρολογία περὶ τινὰ φύσιν εἰσίν, ἢ δὲ καθόλου πασῶν κοινή). εἰ μὲν οὖν μὴ ἔστι τις ἐτέρα οὐσία παρὰ τὰς φύσει συνεστηκυίας, ἡ φυσικὴ ἂν εἴη πρώτη ἐπιστήμη. εἰ δ' ἔστι τις οὐσία ἀκίνητος, αὕτη προτέρα καὶ φιλοσοφία πρώτη, καὶ καθόλου οὕτως ὅτι πρώτη.

Thus First Philosophy is only universal because its object of contemplation is that which *establishes* everything; it is therefore not universal in the sense that it contemplates everything.

The hypothetical formulation which Aristotle uses (a₂₇-28: εἰ μὲν οὖν μὴ ἔστι τις ἐτέρα οὐσία παρὰ ...) corresponds to the doubts which he frequently expresses about the existence of the object of this First Philosophy; it is not until *Met.* Lambda that these doubts are resolved. Other passages reflecting the same uncertainty are: Alpha 2, 983^a7; Beta 1, 995^b14-15; Beta 2, 997^a34 sq.; Beta 4, 999^b1 sq.; Gamma 5, 1009^a36-38; Delta 5, 1015^b14-15; Zeta 2, 1028^b27-32; Zeta 11, 1037^a10-16; Eta 1, 1042^a24-26; Eta 4, 1044^b6-8; and further *De an.* II 1, 412^a11-12; II 3, 414^b18-19; III 6, 430^b24-26.

³⁶ *Met.* Epsilon 1, 1026^a19: θεολογική.

³⁷ *An. Post.* I 1, 71^a1-2 and I 2, 71^b19-22.

³⁸ *An. Post.* I 1, 71^a5-9.

³⁹ Aristotle elaborates on this in *An. Post.* I 19-23.

⁴⁰ *An. Post.* I 3, 72^b7-15; b₁₈-25.

⁴¹ *An. Post.* I 3, 72^b15-18; b₂₅ sqq.

⁴² Cf. *An. Post.* I 1, 24^a22-b₁₂; *Top.* I 1, 100-a₂₇-b₂₃.

⁴³ *An. Post.* I 3, 72^b11-13.

⁴⁴ *An. Post.* I 3, 72^b23-25: καὶ οὐ μόνον ἐπιστήμην ἀλλὰ καὶ ἀρχὴν ἐπιστήμης εἶναι τινὰ φαμεν, ἣ τοὺς ὅρους γνωρίζομεν.

⁴⁵ *An. Post.* I 8, 75^b31: ἐπεὶπερ ἐστὶν ὁ ὁρισμὸς ἡ ἀρχὴ ἀποδείξεως ἡ ...; I 33, 89^a18: τοὺς ὁρισμοὺς δι' ὧν αἱ ἀποδείξεις (cf. II 3, 90^b24-25); *Top.* VIII 3, 158^b3-4; cf. also *An. Pr.* I

27, 43^b1-9; *An. Post.* I 1, 71^a13 (ξυνιέναι has as its object here the definition of something; see I 10, 43^b36-37); *De an.* I 1, 402^a25-403^a2

⁴⁶ *An. Post.* I 33, 88^b36: λέγω γὰρ νοῦν ἀρχὴν ἐπιστήμης. Cf. I 23, 84^b39-85^a1 and I 31, 88^a12-17.

Chapter 8: Definition

¹ See ch. 7 n. 45 and 46. 'a different kind of knowledge': *An. Post.* I 2, 71^b16: ἕτερος τοῦ ἐπίστασθαι τρόπος; ^b32: τὸν ἕτερον τρόπον; I 3, 72^b11-13: if there were only ἐπίστασθαι, the principles would be ἀγνώστους; ^b23-25 (cited in ch. 7 n. 44); I 9, 76^a16-17: οὐκ ἔστι τὰς ἐκάστω ἰδίᾳ ἀρχὰς ἀποδείξει; I 31, 88^a7-8: περὶ δὲ τῶν πρώτων ἄλλος λόγος.

Compare with the last formulation: *An. Post.* II 1, 89^b31-32: ἕνα δ' ἄλλον τρόπον ζητούμεν; II 7, 92^b1-2: τίς οὖν ἄλλος τρόπος; 93^b23-24: ὑποθέσθαι δεῖ ἢ ἄλλον τρόπον φανερά ποιῆσαι; II 19, 99^b24-25: ἢ τοῦ μὲν ἐπιστήμῃ τοῦ δ' ἕτερόν τι γένος; *Met.* Beta 2, 997^a32-34: εἰ δ' ἐτέρως ((namely from demonstrative science)) τίς ἔσται ἡ θεωροῦσα περὶ τὴν οὐσίαν τὰ συμβεβηκότα; Epsilon 1, 1025^b15-16: τις ἄλλος τρόπος τῆς δηλώσεως; Zeta 17, 1041^b10: ἕτερος τρόπος τῆς ζητήσεως.

² *An. Post.* II 1. In order to make clear the meaning of *An. Post.* II 1, I will presently discuss II 8 and 9 first. The intermediate chapters will be dealt with later.

³ *An. Post.* II 1, 89^b25-26: εἰς ἀριθμὸν θέντες; ^b33: ἀπλῶς; II 2, 89^b39: ἢ τὸ ἐπὶ μέρους ἢ τὸ ἀπλῶς.

⁴ The examples are from *An. Post.* II 1.

⁵ Cf. what Sorabji (1981) 242-243 says in reference to *Met.* Theta 10 and *De an.* III 6: 'It is easier to suppose that the reason why he ((Aristotle)) says there is no predication or assertion in the present case is that he thinks of the statement of essence as an *identity* statement. One is not predicating one thing of another, but identifying something with itself'.

⁶ *An. Post.* II 3, 90^b33-35: ἔτι πᾶσα ἀπόδειξις τί κατὰ τινὸς δείκνυσιν, οἷον ὅτι ἔστιν ἢ οὐκ ἔστιν. ἐν δὲ τῷ ὁρισμῷ οὐδὲν ἕτερον ἐτέρου κατηγορεῖται.

Cf. *Top.* I 5, 102^a13-14: δείξαντες γὰρ ὅτι οὐ ταυτόν ἐστιν ἀνηρηκότες ἐσόμεθα τὸν ὁρισμόν, for the definition is ἢ λόγος ἀντ' ὀνόματος ἢ λόγος ἀντί λόγου (102^a1); *Met.* Zeta 4, 1029^b19-20: ἐν ᾧ ἄρα μὴ ἐνέσται λόγῳ αὐτό, λέγοντι αὐτο, οὗτος ὁ λόγος τοῦ τί ἦν εἶναι ἐκάστω.

⁷ *Met.* Zeta 17, 1041^a10-28; cf. Zeta 4, 1030^a3-11.

⁸ *Met.* Zeta 17, 1041^a32-^b2: λανθάνει δὲ μάλιστα τὸ ζητούμενον ἐν τοῖς μὴ κατ' ἀλλήλων λεγομένοις, οἷον ἄνθρωπος τί ἐστι ζητεῖται διὰ τὸ ἀπλῶς λέγεσθαι ἀλλὰ μὴ διορίζειν ὅτι τάδε τόδε.

⁹ *Met.* Zeta 17, 1041^b9-11: ἐπὶ τῶν ἀπλῶν οὐκ ἔστι ζήτησις οὐδὲ διδασίς, ἀλλ' ἕτερος τρόπος τῆς ζητήσεως τῶν τοιούτων.

The ἀπλᾶ do not allow διορίζειν (1041^b2); instead of only being stated simply, they are simple. On this distinction, see the rest of the chapter. By τὰ ἀπλᾶ Aristotle is referring to the elements of which the definition is composed, in particular to the distinctive attribute which indicates the εἶδος, the essence of something (cf. *Met.* Zeta 12, 1038^a25-26: μία ἔσται ἡ τελευταία ((διαφορά)) τὸ εἶδος καὶ ἡ οὐσία).

By τὰ ἀπλᾶ Aristotle does not mean possibly existing immaterial things. Τὸ ἀπλοῦν is the single proposition or the single attribute which forms the starting-point of proof and definition respectively. See *Met.* Delta 5, 1015^b6-15: τὰ πρώτα form the foundation of the proof; ^b11-12: τὸ πρώτον καὶ κυρίως ἀναγκαῖον τὸ ἀπλοῦν ἐστίν; *An. Post.* I 23, 84^b37-85^a1: καὶ ὥσπερ ἐν τοῖς ἄλλοις ἡ ἀρχὴ ἀπλοῦν (...), οὕτως ἐν συλλογισμῷ τὸ ἐν πρώτασις ἄμεσος, ἐν δ' ἀποδείξει καὶ ἐπιστήμῃ ὁ νοῦς.

Important passages in this connection are *Met.* Epsilon 4, 1027^b27-28: περὶ δὲ τὰ ἀπλᾶ καὶ τὰ τί ἐστιν οὐδ' ἐν διανοίᾳ ((τὸ φεῦδος καὶ τὸ ἀληθές)); Zeta 5, 1030^b15-16: τίνος ἔσται ὁρισμὸς τῶν οὐκ ἀπλῶν ἀλλὰ συνδευασμένων and 1031^a1-2: δῆλον τοίνυν ὅτι μόνης τῆς οὐσίας ἐστίν ὁ ὁρισμός; Zeta 13, 1039^a17-19: ἀσύνθετον ἂν εἴη οὐσία πᾶσα, ὥστε οὐδὲ λόγος ἂν εἴη οὐδεμιᾶς οὐσίας (for Zeta 10, 1034^b20: πᾶς δὲ λόγος μέρη ἔχει.; cf. Zeta 15, 1040^a9-10 and Eta 3, 1043^b28-32, cited in n. 27); Theta 10, 1051^b17-18: περὶ δὲ δὴ τὰ ἀσύνθετα

τί τὸ εἶναι ἢ μὴ εἶναι καὶ τὸ ἀληθές καὶ τὸ ψευδὸς and ^b25-27: ἀπατηθῆναι γὰρ περὶ τὸ τί ἐστὶν οὐκ ἔστιν ἄλλ' ἢ κατὰ συμβεβηκός. ὁμοίως δὲ καὶ περὶ τὰς μὴ συνθετάς οὐσίας.; cf. finally *An. Post.* II 9, 93^b21-28: τῶν τί ἐστὶ τὰ μὲν ἄμεσα καὶ ἀρχαί εἰσιν (...). τῶν δ' ἐχόντων μέσον, καὶ ὧν ἔστι τι ἕτερον αἵτιον τῆς οὐσίας (...).

These texts show that both τὸ τί ἐστὶ and ἡ οὐσία are used in two different meanings by Aristotle. According to one meaning, an answer is given e.g. to the question 'what is 'man'?' by referring to both ὕλη and μορφή (or εἶδος). This results in a definition; the object of definition is οὐσία as composed of matter and form. According to the second meaning, an answer is given to the same question by referring to οὐσία as simple or uncompounded, i.e. to the εἶδος alone. This does not result in a definition; for the definition is composed of parts. Here a single element of the definition is concerned. And with regard to that which is simple, (discursive) enquiry is not possible.

All these passages are therefore merely concerned with ἡ μετὰ τῆς ὕλης οὐσία and ἡ κατὰ τὸ εἶδος οὐσία respectively (*Met.* Eta 3, 1044^a10-11). There is no question of an immaterial being of any kind. A different view is taken by Ross (1924) II 274-276. He maintains that τὰς μὴ συνθετάς οὐσίας (1051^b27) refer to 'God and the intelligences which move the spheres' (p. 276). An argument in support of this seems to be contained in Theta 10, 1051^b28-31: καὶ πᾶσαι εἰσὶν ἐνεργεῖα, οὐ δυνάμει, ἐγίγνοντο γὰρ ἂν καὶ ἐφθείροντο, which in combination with Lambda 6, 1071^b19-22 leads to the conclusion that these passages are concerned with the Prime Mover(s). But this is contradicted by Eta 3, 1044^a7-11, in which ἡ κατὰ τὸ εἶδος οὐσία (i.e. οὐσία in the sense of the εἶδος of the compound being or thing) is called ἐντελέχεια καὶ φύσις τις; Eta 5, 1044^b21-29: τὰ εἶδη ἀνευ γενέσεως καὶ φθορᾶς. The latter passage is not concerned with eternal beings; cf. Eta 6, 1045^a34-35: καὶ αἰ τοῦ λόγου τὸ μὲν ὕλη τὸ δὲ ἐνεργεῖα ἐστὶν. (For *θεοὶ εἶναι* (Theta 10, 1051^b30), see esp. Eta 6, 1054^a36^b17).

Views similar to those of Ross are found in Tricot (1974) 450 n. 5 and 524; Aubenque (1979) 78-79 and 86-87. Cf. on the other hand Oehler 183-185; Seidl (1971) 183 and (1978) 493-495; Berti (1978) 148. If in e.g. Theta 10 Aristotle would be referring to immaterial things, this would mean we know them in a direct intuition, instead of concluding that they exist by means of argument. But this is not in agreement with Lambda 6, nor with Aristotle's hesitation to acknowledge the existence of immaterial things (on this, see ch. 7 n. 35; cf. further *De an.* III 7, 431^b17-19 and III 8, 432^a3-9). This is also the view of Seidl (1971) 183. Cf. in this connection Berti, in Aubenque (1979) 85: 'ce serait une forme de mysticisme tout à fait incompatible avec la philosophie d'Aristote'.

In *Met.* Theta 10 we find on the one hand τὰ ἀσύνθετα (1051^b17) and on the other hand τὰς μὴ συνθετάς οὐσίας (^b27). The first are single concepts in general; the second εἶδη without matter, each of which is also a single concept, but a concept that is at the same time a defining concept. See Oehler 183-185; cf. 190; 212-213. Seidl (1971) (1978) and Berti (1978) follow Oehler on this point.

¹⁰ *Met.* Zeta 4, 1030^a6-7: ὥστε τὸ τί ἦν εἶναι ἐστὶν ὅσων ὁ λόγος ἐστὶν ὁρισμός. For this reason the definition is an important theme in various chapters of *Met.* Zeta.

¹¹ *Met.* Zeta 17, 1041^b2-4: ἀλλὰ δεῖ διαθρῶσαντας ζητεῖν. εἰ δὲ μή, κοινὸν τοῦ μηθὲν ζητεῖν καὶ τοῦ ζητεῖν τι γίγνεται.

¹² *Met.* Zeta 17, 1041^b4-7. Cf. S. Mansion 192-197; 195: 'il faut décomposer la question en une attribution de prédicat à sujet'; Oehler 234-235.

¹³ This cause as such is not the same as the object of definition, even if the cause, as far as its effect is concerned, forms part of the defined object. This circumstance may shed light on a problem raised by Ackrill (1981) 383: 'the items we were to consider were those with a cause different from themselves', whereas 'The result of our efforts is definition of items which as defined do *not* have some other cause'. In the syllogism the cause manifests itself as being different from the item concerned; in the definition it belongs to the item. On the relation between a cause inasmuch as it is external to the object of action and the same cause inasmuch as it forms part of this object as far as its effect is concerned, compare ch. 7 and 8 of part III of this study.

¹⁴ *An. Post.* II 8, 93^a15 sqq. On this chapter, see S. Mansion 183-192 and Ackrill (1981). Some of the things said in *An. Post.* II 8 are already found in II 2, but are stated less clearly there.

¹⁵ *An. Post.* II 8, 93^a21-24; ^a22: ἔχοντές τι αὐτοῦ τοῦ πράγματος. Ackrill (1981) 370 sqq. discusses at length the various possible interpretations of 93^a21-22. On the phrase 'a certain living being', see S. Mansion 334 n. 71: 'c'est de la chose matérielle *qui est* un homme ou une maison qu'on demande pourquoi elle est 'telle', sans quoi la question même ne se poserait pas'. Cf. a formulation on p. 196: 'pourquoi l'être que j'appelle homme est-il une matière qualifiée de telle sorte?'.

¹⁶ *An. Post.* II 8, 93^a36-b3. At 93^a36 Waitz reads, instead of διὰ μέσων, δι' ἀμέσων; see Waitz II 396. Ross (1949) and (1978) adopts this reading. But the emendation is unnecessary. Aristotle only means to say that one should take the *cause* of the phenomenon in question, i.e., in the syllogism, the middle term. Cf. 93^a6-9: ἀνάγκη μέσον εἶναι τὸ αἷτιον; II 9, 93^b25-28: τῶν δ' ἐχόντων μέσον ...

¹⁷ *An. Post.* II 8, 93^b16-18: ὥστε συλλογισμὸς μὲν τοῦ τί ἐστίν οὐ γίνεται οὐδ' ἀποδείξεις, δῆλον μέντοι διὰ συλλογισμοῦ καὶ δι' ἀποδείξεως.

Cf. Ackrill (1981) 368: 'Just as in discussion of the definition Aristotle will distinguish strongly between the partial definition that is demonstrated and the complete definition that is shown, revealed or expressed in the demonstrative syllogism but is not itself demonstrated...'.
¹⁸ One acquires a λογικὸς συλλογισμὸς τοῦ τί ἐστίν (93^a15).

¹⁹ *An. Post.* II 8, 93^a6-7 and ^b19; II 9, 93^b26. Cf. *Met.* Zeta 17, 1041^b5.

²⁰ Cf. S. Mansion 196: 'le cas est tout à fait semblable à celui de l'éclipse'.

²¹ *An. Post.* II 9, 93^b21-25: τὰ μὲν ἄμεσα καὶ ἀρχαί εἰσιν, ἃ καὶ εἶναι καὶ τί ἐστίν ὑποθέσθαι δεῖ ἢ ἄλλον τρόπον φανερὰ ποιῆσαι.

²² *Met.* Eta 3, 1043^b23-32: ((...)) ὥστε οὐσίας ἔστι μὲν ἧς ἐνδέχεται εἶναι ὅρον καὶ λόγον, οἷον τῆς συνθέτου, ἐάν τε αἰσθητὴ ἐάν τε νοητὴ ἦ. ἐξ ὧν δ' αὕτη πρώτων, οὐκέτι, εἶπερ τί κατὰ τινὸς σημαίνει ὁ λόγος ὀριστικὸς καὶ δεῖ τὸ μὲν ὥσπερ ὕλην εἶναι τὸ δὲ ὡς μορφήν. Cf. *Met.* Delta 29. For the passage cited, cf. Seidl (1980) 450-451.

²³ Cf. *Met.* Alpha 9, 992^b30-33; *Top.* VI 4. Cf. Scholz 274-275 and Von Fritz (1955) 27 n. 27. My interpretation differs from theirs with regard to 'evidentness' (Evidenz) and the way in which they neglect to make a distinction in this context between κοινά and ἴδια.

²⁴ In relation to these principles S. Mansion 195 wrongly speaks of 'objets simples' and 'natures simples' and states (p. 205): 'Il y a par conséquent, bien qu'Aristote ne prenne pas la peine de les distinguer l'une de l'autre, deux sortes de définitions indémonstrables'. This cannot be maintained; see n. 9. Moreover, no definition is possible of these principles, so no 'definition indémonstrable' either. For a qualification on this point, see n. 43.

²⁵ *An. Post.* II 3 and 4.

²⁶ *An. Post.* II 3, 90^b24-27; ^b25-27: ἔσονται αἱ τῶν ἀρχαί ἀποδεικταὶ καὶ τῶν ἀρχῶν ἀρχαί. καὶ τοῦτ' εἰς ἄπειρον βαδιεῖται.

²⁷ *An. Post.* I 3, 72^b22: ἴσταται δέ ποτε τὰ ἄμεσα; I 22, 84^a29-33. See also *Met.* Gamma, 1006^a5-9. This ἀνάγκη στήναι is the main theme of *An. Post.* I 19-23. Cf. further *Met.* Alpha 2 and Delta 17.

²⁸ *An. Post.* II 4, 91^a26-37; cf. II 6.

²⁹ *An. Post.* II 5, 91^b12-15 and 34-36. On division, see *An. Pr.* I 31. That Aristotle does not reject this method outright is clear from *An. Post.* II 5, 91^b28-32; this passage anticipates *An. Post.* II 13.

³⁰ *An. Post.* II 5, 91^b18-26.

³¹ *An. Post.* II 5, 91^b26-27.

³² *An. Post.* II 6, 92^a27-33; cf. II 3, 90^b33-38.

³³ See again *An. Post.* II 5, 91^b24-27 and II 6, 92^a27-33.

³⁴ *An. Post.* II 7, 92^a37.^b1.

³⁵ *An. Post.* II 1, 92^b1-2: τίς οὖν ἄλλος τρόπος λοιπός;. Cf. I 1, 71^a5-6.

³⁶ *An. Post.* II 1, 92^b4-8. Cf. Von Fritz (1955) 66.

³⁷ *An. Post.* II 1, 92^b8-11.

³⁸ *An. Post.* II 7, 92^b15-16: τί μὲν γὰρ σημαίνει τὸ τρίγωνον, ἔλαβεν ὁ γεωμέτρης, ὅτι δ' ἔστι, δείκνυσιν.; ^b26-28.

Cf. Von Fritz (1955) 40 n. 52: 'Man könnte also der Meinung sein, dass Aristoteles an der interpretierten Stelle ((Von Fritz is referring to *An. Post.* I 10 76^b35 sqq.)) an dem

Verfahren gewisser Mathematiker Kritik übe und ihnen die Lehre gegenüberstelle, dass Definitionen *allein* (ohne die ergänzenden Existentialsätze) nicht als Grundlage eines wissenschaftlichen Beweises dienen können. Aber davon steht an der Stelle nichts'. Von Fritz does not say anything about *An. Post.* II 7 here. But on p. 67 he writes in reference to II 7: 'Da jedoch die Definition selbst keine Angabe über die Existenz des definierten Gegenstandes macht, so muss diese anderweitig gesichert werden'. Of the elementary terms (point, line, triangle; elsewhere (71^a14) only the meaning of the triangle is presupposed, not its existence) only the mathematician need indicate that they refer to things which really exist; he proves the existence of the rest. See *An. Post.* I 10, 76^a31-36; ^a31-34: λέγω δ' ἀρχὰς ἐν ἐκάστῳ γένει ταύτας ἅς ὅτι ἔστι μὴ ἐνδέχεται δεῖξαι. τί μὲν οὖν σημαίνει καὶ τὰ πρῶτα καὶ τὰ ἐκ τούτων, λαμβάνεται, ὅτι δ' ἔστι, τὰς μὲν ἀρχὰς ἀνάγκη λαμβάνειν, τὰ δ' ἄλλα δεικνύται.; cf. II 3, 90^b30-33 and II 9. See further Von Fritz (1955) 39-40 and 66-68; Ackrill (1981) 368-370. The latter writes (p. 369): 'As far as the book I passages are concerned, where teaching and learning are under discussion, the suggestion that only the verbal definition of non-primitive terms has to be given to the learner and known by him prior to the demonstration of existence does not seem absurd'. And p. 370: '(((...))) since if Y and Z are primitive terms in the science it is necessary to 'lay down' and 'know before' both what they signify *and* that they are'. The distinction between 'nominal' and 'essential definition' advanced by Kahn (1981) 386 only leads to confusion, as far as I can see. The way in which he connects this distinction with the one he makes between 'vulgar and scientific conceptualization' (p. 386; cf. 395-396 and 398) is unsound, in my view.

³⁹ *An. Post.* II 7, 92^b28-32. S. Mansion 211 writes on II 7: 'C'est alors seulement qu'apparaît le caractère illusoire de la définition sans implication d'existence' (cf. p. 207). But she fails to recognize (pp. 206-212) that Aristotle is thus confronted by an as yet unsolved problem. She speaks (p. 210) prematurely of a 'fusion' of definition and hypothesis (regarded as an existence claim; cf. ch. 7 n. 11). In (1981) 340-341 she puts forward a somewhat more complex view.

⁴⁰ *An. Post.* II 7, 92^b35-38: 'Ἐκ μὲν τούτων οὐτε ὁρισμὸς καὶ συλλογισμὸς φαίνεται ταῦτὸν ὄν, οὐτε ταύτου συλλογισμὸς καὶ ὁρισμὸς. πρὸς δὲ τούτοις, ὅτι οὐτε ὁ ὁρισμὸς οὐδὲν οὐτε ἀποδείκνυσιν οὐτε δείκνυσιν, οὐτε τὸ τί ἐστὶν οὐθ' ὁρισμῷ οὐτ' ἀποδείξει ἔστι γινῶναι.

⁴¹ *An. Post.* II 8, 93^a1-3; 93^a1: Πάλιν δὲ σκεπτέον.

⁴² *An. Post.* II 9, 93^b21-25; ^b23-24: ὑποθέσθαι δεῖ ἢ ἄλλον τρόπον φανερά ποιῆσαι.

⁴³ *An. Post.* II 10, 94^a9-10; ὁ δὲ τῶν ἀμέσων ὁρισμὸς θέσις ἐστὶ τοῦ τί ἐστὶν ἀναπόδεικτος.; cf. II 3, 90^b26-27: ἢ τὰ πρῶτα ὁρισμοὶ ἔσσονται ἀναπόδεικτοι.

But Aristotle is more specific in *Met.* Eta 3, 1043^b23-32 (cited in n. 22): definition is possible with regard to compound οὐσία, but not with regard to the πρῶτα, the constituent elements. This distinction emerges only gradually in the *An. Post.* so that the term ἀρχή displays a certain ambiguity. Sometimes the definition is principle (II 3, 90^b24: αἱ ἀρχαὶ τῶν ἀποδείξεων ὁρισμοί.; see ch. 7 n. 45 for other places), so that there is a λόγος ἀναπόδεικτος (II 10, 94^a11-12); other times the νοῦς is principle (see ch. 7 n. 46; also *An. Post.* II 19, 100^b15: νοῦς ἂν εἴη ἐπιστήμης ἀρχή). The various interpreters are not sufficiently aware of this ambiguity.

⁴⁴ Aristotle speaks about knowledge which is prior to definition in *Met.* Alpha 9, 992^b32-33 (cited ch. 9 n. 15); cf. *Top.* VI 4.

⁴⁵ Cf. Le Blond (1979) 72.

⁴⁶ *An. Post.* II 11-12 and 16-17.

⁴⁷ See note 9.

⁴⁸ *An. Post.* II 19.

⁴⁹ *An. Post.* II 13, 96^a22-23: πῶς δὲ δεῖ θηρεύειν τὰ ἐν τῷ τί ἐστι κατηγορούμενα.

⁵⁰ *An. Post.* II 13, 96^a24-^b1. This method is also discussed in *Met.* Zeta 15, 1040^a14 sqq. That number is primary which neither has factors nor is the sum of two or more numbers, the unit not counting as a number (*Met.* Mu 1, 1088^a4-8).

⁵¹ *An. Post.* II 13, 96^b1-13.

⁵² *Top.* VII 3, 153^a11-25.

⁵³ *An. Post.* II 13, 96^a24: Τῶν δὴ ὑπαρχόντων ἀεὶ ἐκάστω. One must τὰς διαφορὰς εἰδέναι (97^a8). Cf. 97^a24-26: λαβεῖν τὰ κατηγορούμενα ἐν τῷ τί ἐστὶ, καὶ ταῦτα τάξαι τί πρῶτον ἢ δεύτερον, καὶ ὅτι ταῦτα πάντα.

In the last passage Aristotle still understands this λαβεῖν in a dialectical sense: διὰ τὸ ὑ γένους κατασκευάσαι (a27-28); Tricot (1970) 220 n. 3 writes: 'au moyen des lieux relatifs au genre: *Top.* IV'; cf. *Top.* VI 1, 139^a28-31.

⁵⁴ *An. Post.* II 13, 96^b15-25; 97^b7-39. With regard to 97^b7 sqq., cf. Tricot (1970) 222 n. 2, who follows Mure: 'Ar. résume la discussion, interrompue 96^b25 par la digression sur la διαίρεσις'; Barnes (1975) B 237 writes: 'The illustration at 97^b15-25 ((...)) clarifies the abstract prescription of 97^b7-15'. Cf. on the other hand Le Blond 143 n. 7, who follows Roland Gosselin. Ross (1949) 657-659 juxtaposes two interpretations with regard to 96^b15 sqq. However, the two interpretations do not exclude each other entirely. Ross does not pay enough attention to the beginning of the passage: ὅταν ὅλον τι πραγματεύηται τις (96^b15).

⁵⁵ *An. Post.* II 13, 96^b15-16: Χρὴ δὲ, ὅταν ὅλον τι πραγματεύηται τις, διελεῖν τὸ γένος εἰς τὰ ἄτομα τῷ εἶδει τὰ πρῶτα. The πρᾶγμα in 97^b13 seems to refer to this ὅλον. Cf. *Phys.* I 1 184^a23-25: Διὸ ἐκ τῶν καθόλου ἐπὶ τὰ καθ' ἕκαστα δεῖ προεῖναι. Τὸ γὰρ ὅλον κατὰ τὴν αἰσθησιν γνωριμώτερον, τὸ δὲ καθόλου ὅλον τί ἐστίν. On the last passage and on the procedure of analysis, see Owens (1971). But I cannot agree with his rejection of 'simple apprehension' (p. 463; cf. 475).

⁵⁶ *An. Post.* II 13, 96^b25-97^b6.

⁵⁷ *Met.* Zeta 12, 1037^b8-9.

⁵⁸ *Met.* Zeta 12, 1037^b29-30: οὐδὲν γὰρ ἕτερόν ἐστιν ἐν τῷ ὀρίσμῳ πλὴν τό τε πρῶτον λεγόμενον γένος καὶ αἱ διαφοραί.

⁵⁹ *Met.* Zeta 12, 1038^a5: εἰ οὖν τὸ γένος ἀπλῶς μὴ ἐστὶ παρὰ τὰ ὡς γένους εἶδη.; for the expression τὰ ὡς γένους εἶδη, cf. Zeta 4, 1030^a11-14.

⁶⁰ *Met.* Zeta 12, 1038^a6-8: ἢ εἰ ἐστὶ μὲν ὡς ὕλη δ' ἐστὶν (ἢ μὲν γὰρ φωνὴ γένος καὶ ὕλη, αἱ δὲ διαφοραὶ τὰ εἶδη καὶ τὰ στοιχεῖα ἐκ ταύτης ποιοῦσιν. Cf. *Met.* Delta 28, 1024^a36 sqq. and Eta 6, 1045^a7-25; ^a23-24.

⁶¹ *Met.* Zeta 12, 1038^a8-9.

⁶² *Met.* Zeta 12, 1038^a16: ἕως ἂν ἔλθῃ εἰς τὰ ἀδιάφορα; cf. *An. Post.* II 13, 97^a18-19.

⁶³ *Met.* Zeta 12, 1038^a25-26: μία ἔσται ἡ τελευταία τὸ εἶδος καὶ ἡ οὐσία.

⁶⁴ *Met.* Zeta 12, 1038^a28-34; ^a33: τάξις δ' οὐκ ἐστὶν ἐν τῇ οὐσίᾳ. On the problem of the unity of the definition, cf. Oehler 237-240.

⁶⁵ *An. Post.* II 13, 96^a32-34: ἕως τοσαῦτα ληφθῇ πρῶτον ὧν ἕκαστον μὲν ἐπὶ πλέον ὑπάρξει, ἅπαντα δὲ μὴ ἐπὶ πλέον.

⁶⁶ *An. Post.* II 13, 96^b25 sqq.

⁶⁷ *An. Post.* II 13, 97^a37-39: τοῦ δὲ τελευταίου μηκέτι εἶναι διαφοράν, ἢ καὶ εὐθὺς μετὰ τῆς τελευταίας διαφορᾶς τοῦ συνόλου μὴ διαφέρειν εἶδει ἔτι τοῦτο.; cf. *Met.* Zeta 12, 1038^a19-20: ἡ τελευταία διαφορὰ ἡ οὐσία τοῦ πράγματος.

⁶⁸ *Met.* Zeta 12, 1038^a5 (cited in n. 59) and ^a25-26 (see n. 63). There is mention of οὐσία, so of something which exists; see *An. Post.* II 7, 92^b26-29.

⁶⁹ Cf. *Met.* Zeta 14.

⁷⁰ Cf. note 53. Le Blond writes (p. 144): 'Nous voici ramenés à la question de la perception de l'universel'; cf. S. Mansion (1981) 340-341.

⁷¹ Cf. note 53.

⁷² On the discursive character of the definition, cf. Le Blond (1979) 65.

⁷³ *Met.* Alpha 9, 990^b24-25: καὶ γὰρ τὸ νόημα ἐν οὐ μόνον περὶ τὰς οὐσίας; Delta 6, 1016^b1-3: ὅλως δὲ ὧν ἡ νοήσις ἀδιαίρετος ἡ νοοῦσα τὸ τί ἦν εἶναι, καὶ μὴ δύναται χωρίσαι μήτε χρόνῳ μήτε τόπῳ μήτε λόγῳ, μάλιστα ταῦτα ἐν, καὶ τούτων ὅσα οὐσίαι.; Iota 1, 1052^a29-34; ^a30: ὧν ἡ νόησις μία. Cf. further *An. Post.* I 23, 84^b35-85^a1 (ἡ ἀρχὴ ἀπλοῦν ((...)): ὁ νοῦς); *De an.* III 6.

⁷⁴ *An. Post.* I 3, 72^b23-25.

⁷⁵ Various authors are uncertain about the connection between *An. Post.* II 19 and the preceding chapters; see Le Blond (1979) 72; Barnes (1975) B 259 (his interpretation is wholly untenable, in my view); Brunschwig (1981).

Chapter 9: Experience and intuition

¹ *An. Post.* I 19, 99^b21: τὰς πρώτας ἀρχὰς τὰς ἀμέσους.

² *An. Post.* II 19, 100^a1-2: ἤδη διαφορὰ τις.

³ *An. Post.* II 19, 100^a6-7: ^a16; ^b2; ^b5.

⁴ *An. Post.* II 19, 100^a8: τέχνης ἀρχὴ καὶ ἐπιστήμη.; 100^b15.

⁵ *An. Post.* II 19, 100^a15-16: στάντος γὰρ τῶν ἀδιαφόρων ἐνός.

⁶ *An. Post.* II 19, 100^b2: τὰ ἀμερῇ.

⁷ *An. Post.* I 2, 72^a18-24; II 7; II 10, 94^a9-10.

⁸ *An. Post.* I 2, 71^b25-26 and ^b31-33; cf. I 10, 76^b3-6.

⁹ *An. Post.* I 1, 71^a11-13; I 10, 76^b35-37.

¹⁰ See ch. 7 n. 46.

¹¹ See ch. 8.

¹² Cf. Ross (1949) 599 *ad* 88^a6-8.

¹³ *An. Post.* II 19, 99^b26-28. The same argument in *Met.* Alpha 9, 992^b33-993^a2. The term ἀκριβεστέρας (99^b27) is similar here to ἀληθέστερον (100^b11): truer, revealing more of reality, more relevant. An extensive discussion of the term ἀκρίβεια is found at Kullmann (1974) 122-132. I am not convinced by the (non-traditional) interpretation of 99^b26-28 given by Barnes (1975) B 250.

¹⁴ *An. Post.* II 19, 99^b28-29: εἰ δὲ λαμβάνομεν μὴ ἔχοντες πρότερον, πῶς ἂν γνωρίζομεν καὶ μαθηάνομεν ἐκ μὴ προϋπαρχούσης γνώσεως; Cf. *An. Post.* I 1, 71^a1-2: πᾶσα διδασκαλία καὶ πᾶσα μάθησις διανοητικὴ ἐκ προϋπαρχούσης γίνεται γνώσεως.; *Met.* Alpha 9, 992^b30-31; *E.N.* VI 3, 1139^b26-28: ἐκ προγινωσκομένων δὲ πᾶσα διδασκαλία, ὥστε καὶ ἐν τοῖς ἀναλυτικοῖς λέγομεν. ἡ μὲν γὰρ δι' ἐπαγωγῆς, ἡ δὲ συλλογισμῶ.; *Top.* VI 4, 141^a27-31.

¹⁵ *An. Post.* I 1, 71^a1-9. On the definition, see *Met.* Alpha 9, 992^b32-33: δεῖ γὰρ ἐξ ὧν ὁ ὁρισμὸς προειδέναι καὶ εἶναι γνώριμα. Cf. *Top.* I 1, 100^b18-19: πρῶτα τὰ μὴ δι' ἐτέρων ἀλλὰ δι' αὐτῶν ἔχοντα τὴν πίστιν and *An. Pr.* II 16, 64^b34-38.

Burnyeat (1981) 131 is one of the few to have seen that μὴ δι' ἐτέρων also implies 'not by means of induction'. But I quite disagree with him where (pp. 131-132) he distinguishes between 'knowledge' (γνώσις) of the first principles, which we acquire by induction, and 'understanding' (ἐπιστήμη) of the first principles, brought about by νοῦς.

¹⁶ *An. Post.* II 19, 99^b30-32; 100^a10-11. Aristotle's question τίς ἡ γνωρίζουσα ἕξις; in 99^b18 should not, therefore, lead us to suppose that this 'habitus' implies some or other possession of knowledge. That is still an open question here. But cf. Kahn (1981) 398: 'nous as *hexis* or stable possession of scientific principles'. On the other hand Kahn says on p. 399: 'The problem posed by *An. Post.* II 19 is to account for (a) the acquisition of the *hexis* ((...))'. According to him, however, a more than potentially knowing mind plays a part in this acquisition (p. 399): 'If the intellect can grasp the noetic forms and essences in the phantasms provided by experience, that is because it already knows or *is* the very forms before existence' (Kahn's italics).

¹⁷ *An. Post.* II 19, 99^b32-34: ἀνάγκη ἄρα ἔχειν μὲν τινα δύναμιν, μὴ τοιαύτην δ' ἔχειν ἢ ἔσται τούτων τιμιωτέρα κατ' ἀκρίβειαν.

The term δύναμις, the possibility of knowing or of possessing knowledge, stands opposite here to the term ἕξις (as used in 99^b25, 100^a10 and 11), by which Aristotle refers to some or other possession of knowledge. The paraphrase which Barnes (1975) B 251 gives of this passage is confused. He introduces here the concept of 'deduction' which Aristotle has just rejected in relation to the first principles, and maintains that this deduction of what are after all *first principles* takes place on the basis of something that is less certain than these principles themselves. Nor am I convinced when he says later on that one should not see any connection between *An. Post.* II 19 and *An. Post.* I 1. In general his comments on this passage are not very illuminating.

Seidl 81-82 draws the following conclusion from the passage in question: 'In uns liegen zwar immer schon Erkenntnisse vor, aber nicht bereits Einsichten in Wissenschaftsprinzipien, sondern "weniger wertvolle", nämlich sinnliche Erkenntnisse, die nur gleichsam "Potenz" zu jenen Einsichten sind'. An objection to this interpretation is that what is inferior cannot be the source of what is superior; the potentiality and actuality

of a thing must correspond to one another. One might add that Aristotle does not mention here the *presence* of sense-knowledge; one may not infer from 100^a10-11 that αἴσθησις is a ἕξις and implies the possession of sense-knowledge (cf. Seidl p.81 on ἕξις). Finally, Seidl (at the foot of p.81) fails to recognize that in this case Aristotle denies (99^b28-32) *all* the kinds of pre-existing knowledge mentioned in *Met.* Alpha 9, 992^b31-33.

¹⁸ Cf. *An.Post.* II 19, 99^b32-34.

¹⁹ See the texts listed at note 14. See also Aristotle's definition of the syllogism, e.g. in *An.Pr.* I 1, 24^b18-20 (cited in ch. 1 n. 2). It should be observed that induction is also included in this definition; see *An.Pr.* II 23.

²⁰ This is not made clear by the various commentators. In connection with *An.Post.* II 19 Oehler speaks of 'Anschauung' and contrasts it with 'das diskursive, dianoetische Denken', but he only discusses the last part of this chapter, which deals with νοῦς.

²¹ *An.Post.* II 19, 99^b34-35; ^b35: ἔχει γὰρ δύνάμιν σύμφυτον κριτικὴν, ἣν καλοῦσιν αἰσθησιν.

I translate δύνάμεις as 'possibility' or 'potentiality' instead of 'faculty'. The term 'faculty' implies a positive power to act, whereas Aristotle seems to use the term δύνάμεις precisely in order to indicate that the kind of knowing referred to entails no such thing. This is perhaps also to be inferred from a phrase slightly further on, 100^a13-14: ἡ δὲ ψυχὴ ὑπάρχει τοιαύτη οὕσα οἷα δύνασθαι πάσχειν τοῦτο. On this passage, cf. Le Blond 134-135.

For the same reason, κρίνειν (99^b35: κριτικὴν) ought to be translated as 'to discern' or 'to discriminate' rather than as 'to judge'. Cf. Ross (1949) 84; 'discriminative faculty'; p. 674: 'faculty of discernment'; Tricot (1970) 243: 'puissance de discrimination' (but Barnes (1975) B 80 and 251 translates 'judgemental capacity'; so does Engberg-Pedersen). See also Hamlyn 176: 'there can be little doubt that Aristotle has discrimination in mind here'. According to Hamlyn, however, this only applies to sensation and he claims without substantiating this in the text, that experience already implies judgement (p.177); experience 'involves the ability to use concepts'. Accordingly, he translates λόγος (100^a2) as 'judgement'. He holds that a principle of selection is necessary opposite the many things which are repeated in experience (p. 179). But for a different view, cf. Von Fritz 37-38 (see ch. 10 n. 41). For τὸ κρίνειν, see also part III ch. 2 n. 6.

²² *An.Post.* II 19, 99^b34-100^a14; *Met.* Alpha 1, 980^a27-981^a12. The two chapters run almost entirely parallel on this point. Cf. further *An.Post.* I 31, 88^a12-17.

²³ *An.Post.* II 19, 100^a13-14 (cited in n.21).

²⁴ Cf. *E.N.* VI 9, 1142^a15-16: νέος δ' ἐμπειρος οὐκ ἔστιν. πλῆθος γὰρ χρόνον ποιεῖ τὴν ἐμπειρίαν. It is possible to learn mathematics at an early age, since the mathematician is not concerned with the real and concrete existence of his object of study; see *E.N.* VI 9, 1142^a11-20; *An.Post.* I 13, 79^a2 sqq. and I 14, 79^a17-24.

²⁵ Cf. also ch. 10 n. 48. Le Blond writes: '((...)) n'est pas le fruit d'un travail de l'esprit, mais plutôt résulte du dépôt progressif des sensations elles-mêmes'.

²⁶ *An.Post.* I 31, 87^b30-31: τὸ δὲ καθόλου καὶ ἐπὶ πᾶσιν ἀδύνατον αἰσθάνεσθαι.; 88^a16-17: τῷ ὁρᾶν μὲν χωρὶς ἐφ' ἐκάστης, νοῆσαι δ' ἅμα ὅτι ἐπὶ πασῶν οὕτως.; cf. *Met.* Alpha 1, 981^a5-12 and *An.Post.* II 19, 100^a6-8.

Le Blond 131 sqq. exaggerates slightly by talking about an 'inspiration sensualiste' in relation to *An.Post.* II 19. The reason behind this exaggeration seems to be his view that a passive, intuitive mind is an absurdity: 'Ce mécanisme inconscient apparaît difficilement identifiable au νοῦς' (p. 138). See the extensive discussion of this topic in part III of our study.

The views of Barnes (1975) B 256-259 on the νοῦς in *An.Post.* cannot be maintained, in my opinion. Νοῦς is according to him 'not a means of acquiring knowledge' (p. 257). His conclusion is curious: 'Now has no philosophical importance in *APst*' (p. 259).

²⁷ *An.Post.* II 19 100^b10: ἐπιστήμη δ' ἅπασα μετὰ λόγου ἐστί. Cf. *E.N.* VI 6, 1140^b33 and VI 9, 1142^a25-26.

²⁸ *An.Post.* *An.Post.* II 19, 100^b9-12; cf. I 2.

²⁹ *An.Post.* II 19, 100^b12-17.

³⁰ Cf. Maier 22 n.1. Maier calls νοῦς 'das Vermögen des intuitiven Denkens', and calls ἐπιστήμη 'eine Domäne des diskursiven Denkens'. Where intuition is concerned, how-

ever, I prefer to use the term 'knowing' or 'cognition' or the term 'insight' and to avoid the term 'thinking'. This brings out more clearly the parallel and correlation between sensation and intellective intuition. I find somewhat ambiguous, therefore, a formulation in Oehler 186: 'die einfache Apprehension des noetischen Denkens'.

³¹ *An. Post.* II 19, 100^b7-8. Cf. n. 41.

³² *An. Post.* I 2.

³³ *An. Post.* I 2, 71^b22: καὶ προτέρων καὶ αἰτίων τοῦ συμπεράσματος.; cf. *An. Pr.* I 24, 41^b24-27.

³⁴ Cf. Oehler 189: 'Die denkende Erfahrung des Seienden ist für Aristoteles an die sinnliche Erfahrung gebunden'. Most interpreters do not link up the intuition in *An. Post.* II 19 with that of *Met.* Epsilon 4 and Theta 10. This is logical if it is assumed that the intuition in the lastmentioned chapters has the immaterial as its object; see ch. 8 n. 9. S. Mansion (1981) 334 n. 10 does link up the two.

³⁵ *Met.* Epsilon 4, 1027^b25-27.

³⁶ *Met.* Epsilon 4, 1027^b27-28: περὶ δὲ τὰ ἀπλᾶ καὶ τὰ τί ἐστὶν οὐδ' ἐν διανοίᾳ. On τὰ ἀπλᾶ and τὰ τί ἐστὶν, see ch. 8 n. 9.

³⁷ Cf. *An. Post.* II 1; *Cat.* 4, 2^a4-10; *De int.* 1, 16^a9-16; *De an.* III 6, 430^a26-28 and ^b26-30; *Met.* Zeta 17, 1041^b1-2.

³⁸ *Met.* Epsilon 4, 1027^b29-1028^a2; 1027^b34-1028^a1: τῆς διανοίας τι πάθος. 1028^a2: οὐκ ἔξω δηλοῦσιν οὐσάν τινα φύσιν τοῦ ὄντος.

³⁹ In this context Oehler 171-172 talks about a dianoetic concept of truth as distinct from a noetic concept of truth, but also, following Jaeger, about 'eine Art besonderer metaphysischer Wahrheit' and about a 'besondere metaphysische Erkenntnisform'. The objects of this form of cognition, according to Oehler, are 'die einfachen, unzusammengesetzten und ewigen Substanzen, die nichts als reine Aktualität sind' (p. 170). Especially the use of the expression 'eternal substances' in this context suggests that pure immaterial beings are being referred to. This is not the case in Oehler, however (see pp. 182-185 and p. 217 sqq.). On p. 183 n. 2 he writes: 'Aber er ((Ross (1924) II)) ist dann trotzdem einem verhängnisvollen Irrtum verfallen, nämlich der Auffassung, Aristoteles habe unter den μὴ συνθεταὶ οὐσίαι 'God and the intelligences which move the spheres' (276) verstanden'.

By noetic truth Aristotle can only mean the intuition which follows sensory intuition. Contrary to what Oehler says, therefore, the issue here is intellective *cognition* in general, and this is not a particular, exceptional kind of cognition in Aristotle.

On the one hand, Oehler refers to this cognition as an 'Erkenntnisform', (172) as 'das noetische Sehen', 'ἀναχάζεσθαι des Menschen durch die Dinge', 'Apprehension' (188) and even speaks of 'eine Intentionalität des Seienden' (188; cf. 192). On the other hand, he calls this cognition 'das noetische Denken' (186), 'die denkende Erfahrung' (189) and says: 'Dieses ((the νοητὸν εἶδος)) wächst also nicht selbstständig aus der Sinneswahrnehmung hervor, sondern bedarf der Vorstellung und vor allem des noetischen Denkens, das aus dem sinnlich Besonderen das unsinnlich Allgemeine heraushebt' (pp. 189-190). It seems to me that 'Heraushebung' and 'Beeindrucktwerden' (190) cannot be predicated of the same event. See also part III of this study.

⁴⁰ *Met.* Theta 10, 1051^b17-25; ^b24-25: τὸ μὲν θιγεῖν καὶ φάναι ἀληθές (οὐ γὰρ ταυτὸ κατάφασις καὶ φάσις). Cf. *De an.* III 7, 431^a8: τὸ μὲν αἰσθάνεσθαι ὁμοιον τῷ φάναι μόνον καὶ νοεῖν.

The contrast with discursive procedures is brought out by a passage in *Phys.* VIII 1, 252^a22-25: 'Ἀλλὰ καὶ τοῦτο δεῖ τὸν λέγοντα μὴ φάναι μόνον, ἀλλὰ καὶ τὴν αἰτίαν αὐτοῦ λέγειν, καὶ μὴ τίθεσθαι μηδὲν μηδ' ἀξιοῦν ἀξίωμ' ἄλογον, ἀλλ' ἡ ἐκαγωγὴν ἢ ἀπόδειξιν φέρειν.

⁴¹ *Met.* Theta 10, 1052^a1-4; cf. 1051^b25-28. That is why the connection between intuition and truth is closer than that between science and truth. Intuition cannot err; in science it is possible to err, even if this is unnecessary and science can always be true (see *An. Pr.* II 21, 66^b18-67^a6). For τὰ ἀσύνθετα (1051^b17) and τὰς μὴ συνθετάς οὐσίας (1051^b27), often interpreted as 'the immaterial substances', see ch. 8 n. 9.

Met. Epsilon 4 deals primarily with logical truth (Oehler: dianoetic truth). *Met.* Theta 10 deals primarily with cognitive truth (Oehler: noetic truth). Oehler 170-172

rightly states that there can nevertheless be no contradiction between the two chapters, since each discusses both kinds of truth. On Theta 10, see Oehler, who is very detailed here: 170-186; 210-222, 234; 240-244; cf. also Seidl (1980) 493-495.

The following authors seem less pertinent in what they say about the object of the cognition in question: Ross (1924) II 274-276; Tricot (1974) 344 n. 4; Aubenque (1979) 78-79 and 86-87; Owens (1978)³ 413-414. Cf. on the other hand Berti (1978) 147-149 and Berti's reply to Aubenque in Aubenque (1979) 85.

Less clear about the distinction between logical truth and cognitive truth are: Wilpert (1940) 117 (but cf. p. 121); Aubenque 169-170; Berti (1978) 149-150. Berti writes (p. 150) in reference to Theta 10, 1051^b32-33 (ἀλλὰ τὸ τί ἐστι ζητεῖται περὶ αὐτῶν, εἰ τοιαῦτά ἐστιν ἢ μή): 'The infallibility of intellection, therefore, does not exclude a certain progress, such as a search must necessarily be, nor does it exclude the risk of failure, since it is possible not to find at all what one is looking for'. This implies that it is possible 'to have intellection' without having found what one is looking for. In Aristotle, however, this involves an absurdity. Moreover, Aristotle does not compare error to an intellection without result, but to the absence of intuition. See finally Theta 6, 1048^b18-35: νοεῖν is a form of ἐνέργεια and not a κίνησις, and hence does not lead to a result. One might add that what Berti says on p. 150 about the ζήτησις ('it ends in an infallible intuition') is at odds with what he says about it on p. 149 ('qualifying it', i.e. intellection) (my italics).

The meaning of the term ζήτησις in 1051^b32 is specific. Cf. *Met.* Epsilon 1, 1025^b14-16: οὐκ ἔστιν ἀποδείξεις οὐσίας οὐδὲ τοῦ τί ἐστιν ((...)), ἀλλὰ τις ἄλλος τρόπος τῆς δηλώσεως.; *Met.* Zeta 17, 1041^b9-11: φανερόν τοίνυν ὅτι ἐπὶ τῶν ἀπλῶν οὐκ ἔστι ζήτησις οὐδὲ διδασκίς, ἀλλ' ἕτερον τρόπος τῆς ζητήσεως τῶν τοιούτων.; and *An. Post.* II 1: a double ζήτησις corresponding to (a) syllogism and (b) something else. In the end it emerges from *An. Post.* II that only ὁρισμός, ἐμπειρία, and νοῦς can solve the problem raised by τὸ τί ἐστι. Of these, only the ὁρισμός is a kind of ζήτησις or θηρεύειν (*An. Post.* II 13 96^a22). 'Εμπειρία and νοῦς must precede these. They provide the elements (= τοιαῦτά ^b32-33) of what is ὅπερ εἶναι τι καὶ ἐνεργεῖα (Theta 10, 1051^b30-31). Subsequently, one attempts to discover by means of a defining ζήτησις to what extend and in what order these elements apply to τὸ τί ἐστι. This latter part of the procedure is dealt with in *An. Post.* II 13: πῶς δὲ δεῖ θηρεύειν τὰ ἐν τῷ τί ἐστι κατηγορούμενα (96^a22-23); cf. *Top.* I 5, 102^a32-34: ἐν τῷ τί ἐστι δὲ κατηγορεῖσθαι τὰ τοιαῦτα λεγέσθω ὅσα ἀρμόττει ἀποδοῦναι ἐρωθέντα τί ἐστι τὸ προκείμενον.

Cf. Oehler 236: 'Ein Suchen, die Suche nach dem τί ἐστι, findet hier nur in dem Sinne der nachträglichen Frage nach der Definition statt, dass heisst danach, ob das vorgängig noetisch Erfasste eigentlich τοιούτον ist oder nicht. Das bedeutet praktisch ((says Oehler following Arpe (1938) 52)) ein "Herumprobieren mit Definitionsversuchen"'.
⁴² *Met.* Lambda 7, 1072^b18-24; cf. Lambda 9, 1074^b38-1075^a5 and also *De an.* II 7, 431^b17.

⁴³ Intuition is confined to a simple object. See also *Met.* Mu 3, 1078^a10-11: τὸ ἀκριβές (τοῦτο δὲ τὸ ἀπλὸν ἐστίν). and *An. Post.* I 23, 84^b37-85^a1: καὶ ὥσπερ ἐν τοῖς ἄλλοις ἡ ἀρχὴ ἀπλοῦν, τοῦτο δ' οὐ ταυτὸ πανταχοῦ, ((...)) οὕτως ἐν συλλογισμῷ τὸ ἐν πρότασις ἄμεσος, ἐν δ' ἀποδείξει καὶ ἐπιστήμῃ ὁ νοῦς.

According to Aristotle, therefore, the πρότασις ἄμεσος too is simple and is a principle. And he calls the πρότασις ἄμεσος of the proof the object of νοῦς. Thus there is no reason to assume that the ἀρχήνεια of *An. Post.* I 34 is essentially different from the νοῦς in *An. Post.* II 19. Nevertheless, II 19 is in the first place concerned with the intuition of the single elements from the definition and πρότασις ἄμεσος.

It seems possible to infer from *An. Post.* I 31, 88^a2-8 that Aristotle first introduced intellectual intuition in order to solve the problem of the knowledge of simple concepts: οὐ μὴν ἀλλ' ἐκ τοῦ θεωρεῖν τοῦτο πολλάκις συμβαίνειν τὸ καθόλου ἂν θηρεύσαντες ἀπόδειξιν εἶχομεν. ((...)) ὥστε περὶ τῶν τοιούτων ἡ καθόλου τιμιωτέρα τῶν αἰσθήσεων καὶ τῆς νοήσεως, ὅσων ἕτερον τὸ αἶτιον. περὶ δὲ τῶν πρώτων ἄλλος λόγος. In these passages one partly finds the theory of experience as explained in II 19, but the repeated contemplation (88^a3), reminiscent of the ἐμπειρία, stands opposite here to sensory cognition and thus, it seems implied, to intellectual intuition. And for knowledge of the πρώτα Aristotle refers to a different solution.

At the end of this chapter we then find the idea that intellectual intuition of the universal can be occasioned by sensation (I 31, 88^a9-17). In that case it is no longer necessary to say: *περί δὲ τῶν πρώτων ἄλλος λόγος*. Aristotle has now completed the transition from the sphere of discursive reasoning to that of sensory and intellectual intuition. According to what he says here, one obtains the universal through sensation without using *θεωρεῖν* (88^a3), *θηρεῦειν* (88^a3-4), and *ζήτησις* (88^a13): *ἔχοντες τὸ καθόλου ἐκ τοῦ ὁρᾶν* (88^a14); cf. II 2, 90^a24-30). Introduction of *νοῦς* is necessary, however, for the fact remains that sensation alone cannot make the universal known: *οὐ γὰρ ἦν τοῦ καθόλου αἰσθησις* (88^a2).

In II 19 we now find *μνήμη* and *ἐμπειρία* as the transition between *αἴσθησις* and *νοῦς*, whereas I 31 (88^a16: *ἄμα*), I 34 (89^b10: *ἀγχίνοιά ἐν ἀσκέπτῳ χρόνῳ*; b12: *ταχὺ ἐνενόησε*), and II 2 (90^a27: *ἄμα*) discuss an intuition that takes place suddenly and immediately. Intuition is however only immediate inasmuch as it is considered in contrast to knowledge which is produced by means of *ζήτησις*. For also the intuition mentioned in I 31, I 34, and II 2 is occasioned by several cases of the universal (88^a16: *χωρὶς ἐφ' ἐκάστης*; 89^b11: *αἰεὶ*; 90^a28 and ^a30: *ἐγένετο*), which implies at least to some extent memory and experience. A certain contrast remains between these passages and II 19, but it seems of minor importance. The interpretation which I have given finds little support in the commentaries of Ross (1949), Tricot (1970), and Barnes (1975) B, though these are illuminating on various points. I cannot agree with the views of Ross (1949) *ad* 88^a2-4 and Tricot p. 148 n. 2 that in this passage the universal is the object of intuition, nor with the view of Barnes *ad* I 34 that *ἀγχίνοια* needs to be supplemented by a *θεωρεῖν* as referred to in 88^a2-4.

⁴⁴ *An. Post.* II 19, 99^b21, 100^a16, b2, b5, b9.

⁴⁵ *An. Post.* II 19, 100^a7-8.

⁴⁶ *An. Post.* I 4, 73^b27-28; I 31, 88^a5-6; II 13, 96^b3.

⁴⁷ *An. Post.* II 19, 100^a16-b1: *καὶ γὰρ αἰσθάνεται μὲν τὸ καθ' ἑκάστων, ἡ δ' αἴσθησις τοῦ καθόλου ἐστίν*. Cf. II 2, 90^a28-29: *ἐκ γὰρ τοῦ αἰσθέσθαι καὶ τὸ καθόλου ἐγένετο ἂν ἡμῖν εἰδέναι*.

⁴⁸ Cf. *An. Post.* I 31, 88^a16-17; *Met.* Alpha 1, 981^a5-12.

⁴⁹ *An. Post.* II 19, 100^a10-11; b3-5.

⁵⁰ *Met.* Mu 10, 1087^a19-21: *ἀλλὰ κατὰ συμβεβηκὸς ἡ ὅψις τὸ καθόλου χρώμα ὁρᾷ ὅτι τόδε τὸ χρώμα ὃ ὁρᾷ χρώμά ἐστιν, καὶ ὃ θεωρεῖ ὁ γραμματικός τόδε τὸ ἄλλα ἄλφα*.

⁵¹ Cf. *Met.* Zeta 6.

⁵² *Met.* Zeta 13, 1038^b16: *τὸ δὲ καθόλου καθ' ὑποκειμένου τινὸς λέγεται αἰεὶ*.

⁵³ *An. Post.* I 31; *Met.* Zeta 10, 1035^b34-1036^a1; Zeta 15, 1039^b27-1040^a7; Mu 9, 1086^b5-7.

⁵⁴ *Met.* Mu 10, 1087^a10-15: *τὸ δὲ τὴν ἐπιστήμην εἶναι καθόλου πᾶσαν, ὥστε ἀναγκαῖον εἶναι καὶ τὰς τῶν ὄντων ἀρχὰς καθόλου εἶναι καὶ μὴ οὐσίας κεχωρισμένας, ἔχει μὲν μάλιστα ἀπορίαν τῶν λεχθέντων*.

⁵⁵ Cf. *Met.* Beta 4, 999^a24-b4 and esp. Beta 6, 1003^a5-17.

⁵⁶ *Met.* Mu 10, 1087^a15-18: *ἡ γὰρ ἐπιστήμη, ὥσπερ καὶ τὸ ἐπίστασθαι, διττόν, ὧν τὸ μὲν δυνάμει, τὸ δὲ ἐνεργείᾳ. ἡ μὲν οὖν δύναμις ὡς ὕλη καθόλου οὐσα καὶ ἀόριστος τοῦ καθόλου καὶ ἀόριστος ἐστίν, ἡ δ' ἐνέργεια ὠρισμένη καὶ ὠρισμένου, τόδε τι οὐσα τοῦδε τινος*.

⁵⁷ *Met.* Mu 10, 1087^a20-21; cf. *De an.* II 5, 417^a21-30.

⁵⁸ *Met.* Mu 10, 1087^a19-20; cf. *An. Post.* I 31, 88^a9-17 and II 19, 100^a16-b1.

Tricot (1974) 439 n. 2 and 794 n. 1 (following Robin) qualifies the solution given by Aristotle in Mu 10 as 'un simple expédient de polémique'. In the same vein Ross (1924) II 466 writes: 'contrary to his usual view, which is that actual knowledge is of universals'. But Ross also says: 'it is a genuine part of Aristotle's theory, though perhaps inconsistent with another part'. Cf. Ross (1924) I cviii-cx. Owens (1978³) 427-431 sees no inconsistency. Owens's interpretation hinges on the following (p. 431): 'The form is *definite*. The singulars and the universal are both *indefinite*'. But this is at odds with what Ross rightly calls Aristotle's 'usual view'. Owens does not recognize (p. 428) that knowledge about the essence of something results from knowledge of the universal. He reverses the order on this point: 'But this knowledge of the *a* according to its *what-IS-being*,

which is the source of its 'thisness', can be applied to any other *a* whatsoever. It is able to be applied universally, and so is potentially universal'.

My interpretation is perhaps more in agreement with that of Seidl (1980) 597-598, who writes: 'Die vorliegende Stelle ist eine der wenigen bei Aristoteles, die erklärt, wie die Vernunftkenntnis, Wissenschaft, die an sich auf das Allgemeine geht, auf das Einzelne gerichtet ist, weil sie sich im Allgemeinen noch in Möglichkeit verhält und sich erst im *Rückbezug* des Allgemeinen zur Wesenheit der wirklichen Einzeldinge an diesen voll verwirklicht' (my italics). But Seidl (1971) 53 does not see this relation as an *application* of universal science, it appears here: 'knüpft sie ((the particular science)) am Einzelnen an, nimmt von ihm ihren Ausgang'. He links up universal science with 'induktiven Auffindung von Prinzipien'. He makes no connection here with *An. Post.* I 1, 71^a17 sqq.; he does make this connection in (1980) 598.

Leszl (1972) 295-296 relates this passage from *Met.* Mu 10 with *An. Pr.* II 21, 67^a8 sqq., *An. Post.* I 1, 71^a17-b⁸, and *Phys.* VII 3, 247^b4-7, and in this way arrives at an interpretation which is correct, in my view. Cf. p. 302: 'But if its contents are thus universal, its application is particular, and it is when it is applied to some individual case that knowledge — as knowledge which is knowledge about or referred to the individual case (though not *qua* individual case) — is actual'. Leszl (pp. 305-313) examines and criticizes the views of Owens (1978³) and Cherniss (1944) on the subject; see his article for further literature.

S. Mansion 320 n. 26 and (1981) 339 n. 16 follows Leszl. Finally, see also Heinaman (1980) on Mu 10. Annas (1976) is less helpful on this passage.

There is a connection between Aristotle's views on the relation between, on the one hand, potential and actual knowing and, on the other hand, the principle that contemplation does not take place without images. For this principle, see *De an.* I 1, 403^a5-10; III 7, 431^a16-17; b²-5; III 8, 432^a3-9; *De sensu* 6, 445^b16-17. Leszl (p. 303) also makes the connection referred to.

⁵⁹ S. Mansion (1981) 334 n. 10 writes: 'Cependant le jeu de la discursion aura beau multiplier les intermédiaires conceptuels, il faudra toujours, pour rejoindre le réel, un moment d'application au concret qui soit immédiat'. Just so the concept must be acquired through a direct contact with concrete things. Before that time there can in fact be no question of application.

⁶⁰ Cf. Leszl (1972) 295-296.

⁶¹ *An. Pr.* II 21, 66^b18-67^a6.

⁶² *An. Pr.* II 21, 67^a8-13.

⁶³ *An. Pr.* II 21, 67^a13-16.

⁶⁴ *An. Pr.* II 21, 67^a16-21.

⁶⁵ *An. Pr.* II 21, 67^a21-24. Cf. Plato *Meno* 81b-86b. Aristotle writes 67^a23-24: ἅμα τῇ ἐπαγωγῇ λαμβάνειν τὴν τῶν κατὰ μέρος ἐπιστήμην ὥσπερ ἀναγνωρίζοντας.

⁶⁶ *An. Pr.* II 21, 67^a38-b³: οὐδὲν γὰρ τῶν αἰσθητῶν ἔξω τῆς αἰσθήσεως γενομένου ἴσμεν, οὐδ' ἂν ἡσθημένοι τυγχάνωμεν, εἰ μὴ ὡς τῷ καθόλου καὶ τῷ ἔχειν τὴν οἰκείαν ἐπιστήμην, ἀλλ' οὐχ ὡς τῷ ἐνεργεῖν.

On this tripartition, cf. *De an.* II 5, 417^a21-30. The commentary which Tricot (1971) 302 n. 1 provides on this passage does not apply, nor does it agree with the quotation from Waitz which introduces his commentary. Cf. on the other hand Ross (1949) 475 above.

⁶⁷ *An. Post.* I 1, 71^a17-b⁸. Cf. further I 24, 86^a22-30 and also *E. N.* VI 9, 1142^a25-30. On the first-mentioned passage, cf. S. Mansion (1981), esp. 338-339.

⁶⁸ *An. Pr.* II 21, 67^a23-24 (cited in n. 65); cf. *An. Post.* I 1, 71^a21: ἅμα ἐπαγόμενος.

⁶⁹ *An. Post.* I 1, 71^a24-29: πρὶν δ' ἐπαχθῆναι (...) καθόλου ἐπίσταται, ἀπλῶς δ' οὐκ ἐπίσταται.

⁷⁰ See ch. 6. But Ross (1949) 506 writes: 'ἅμα ἐπαγόμενος here means 'at the very moment one is led to the conclusion' and this is the main usage underlying the technical sense of ἐπαγωγή = 'induction'. The latter statement may be right; the former certainly is not. According to Ross, however, 'the process referred to here is not induction' (cf. p. 476 *ad* 67^a23: 'There is no reference to induction').

⁷¹ Cf. ch. 6 n. 44. *An. Post.* I 1, 71^a19: ὑπὸ τὸ καθόλου οὐ ἔχει τὴν γνῶσιν.

Cf. S. Mansion (1981) 330: 'ce qui intéresse ici notre auteur, c'est le rapport entre la préconnaissance d'une proposition universelle et la connaissance acquise ultérieurement d'un cas qui rentre sous celle-ci'. And Leszl (1972) 303 on *Met.* Mu 10: 'potential knowledge is the unactualized capacity to apply the general rule to any particular case which falls under it, and actual knowledge is the actualization of this capacity by application of that rule to a given particular case'. Leszl does not, however, talk about induction in this context.

⁷² *An. Post.* I 18, 81^b2: ἀδύνατον δὲ τὰ καθόλου θεωρῆσαι μὴ δι' ἐπαγωγῆς.

⁷³ *An. Post.* I 18, 81^b3-4: δι' ἐπαγωγῆς γνώριμα ποιεῖν. Cf. *Tōp.* VIII 1, 155^b21: ἐπαγωγῆς χάριν τοῦ δοθῆναι τὸ καθόλου: 'in order that the other concedes the universal'; VIII 8, 160^a37-b5; *S.E.* 15, 174^a33-35; *An. Post.* II 7, 92^a35-38: οὔτε γὰρ ὡς (...) δῆλον ποιήσει ὅτι (...), οὐθ' ὡς ὁ ἐπαγωγὸν διὰ τῶν καθ' ἕκαστα δῆλον ὄντων, ὅτι πᾶν οὕτως τῷ μηδὲν ἄλλως. According to these passages, therefore, it is not so that the person who performs induction comes to know something by means of induction. The performer of induction makes something clear to another person. The meaning of the term θεωρεῖν (81^b2) is reminiscent of the meaning of the term in *De an.* II 5, 417^a28-29 or in III 8, 432^a8-9: actual contemplation of the universal is only possible by imagining one of its particular cases. Barnes (1975) B too makes the connection with *De an.* III 8.

Hamlyn (1976) writes in the same vein on the induction in *An. Post.* I 18. The interpretation of Von Fritz 33-43 is untenable. He writes (p. 36): 'um zu den ersten geometrischen Sätzen zu gelangen'; cf. Seidl 73: 'durch Induktion gewonnen werden'; Guthrie 191: 'impossible to grasp the universal except by induction'; Kahn (1981) 394: 'it begins with sense perception and ends with a well-defined concept or universal' (all italics mine).

Cf. on the other hand Hamlyn p. 170: 'epagoge is involved in the application of general principles to cases, not just in the argument for the principles themselves' (Hamlyn's italics). We might add that one does not exclude the other: whoever instances a particular case applies the principle in order to make it plausible *opposite another person*. That is in fact what Hamlyn says slightly further on (p. 171). He rightly links up *An. Pr.* II 21 (the passage just discussed) with *An. Post.* I 18. Von Fritz 22-24 sees a contrast here. He emphasizes the immediate character of the insight resulting from induction (p. 24: 'eine unmittelbare Einsicht'). He is right in doing so, as far as the pupil is concerned. But it is the teacher who carries out the inductive procedure.

⁷⁴ *An. Post.* I 18, 81^a39-40: εἴπερ μανθάνομεν ἢ ἐπαγωγῇ ἢ ἀποδείξει. Cf. ch. 4 n. 1 and 2.

⁷⁵ *An. Post.* I 18, 81^b7-8: οὔτε γὰρ ἐκ τῶν καθόλου ἄνευ ἐπαγωγῆς. Cf. Verdenius (1981) 345: 'D. W. Hamlyn rightly concludes that ἐπαγωγή 'is involved in the application of general principles to cases' and that the same is implied in the statement that 'one cannot get knowledge from universal propositions without ἐπαγωγή' (A 18, 81^b7-8)'. Von Fritz, on the other hand, paraphrases (p. 34): 'Denn aus dem Allgemeinen (sc. kann man wissenschaftliche Erkenntnis gewinnen) nicht ohne (sc. am Anfang stehende) ἐπαγωγή und durch ἐπαγωγή nicht ohne Wahrnehmung'. But this produces a confused train of thought: according to Von Fritz, to proceed ἐκ τῶν καθόλου and to perform induction are not the same, whereas Aristotle's phrase does say something of the sort. Ross (1949) 566 holds the same view as Von Fritz: 'without *previous* induction to establish general truths' (my italics). This is also Tricot's interpretation (1970) 95 n. 5.

⁷⁶ *An. Post.* II 19, 100^b3-5: δῆλον δὲ ὅτι ἡμῖν τὰ πρῶτα ἐπαγωγῇ γνωρίζειν ἀναγκαῖον. καὶ γὰρ ἡ αἴσθησις οὕτω τὸ καθόλου ἐμποιεῖ.

⁷⁷ Cf. *An. Post.* II 19, 100^a11: ἀπὸ αἰσθήσεως. Cf. Hamlyn 180-181.

⁷⁸ At this point my interpretation no longer finds support in Hamlyn. He says (p. 174) that the induction of *An. Post.* I 1 is different from the one in *An. Post.* II 19: 'Aristotle's solution to the Meno-dilemma (...) will not work (...) in the case of the acquisition of knowledge of the general principles themselves. And in the last chapter of the *Posterior Analytics* we seem to be concerned with just this'. In view of this last fact, however, one can also assume that II 19 is not in the first place concerned with induction at all. But Hamlyn follows here the traditional interpretation, which identifies experience or even

intuition with induction or at least a form of induction. See the literature discussed in ch. 10.

⁷⁹ Aristotle shows in *S.E.* 15, 174^a33-37 that the two can occur in combination; ^a36-37: διὰ τὴν τῆς ἐπαγωγῆς μνείαν. While one person is (rather inconspicuously) carrying out an induction, the universal takes shape imperceptibly in the memory of the other, so that the former need not ask the latter whether or not he concedes the universal.

On the distinction between process and procedure, cf. Le Blond 37: 'Le dernier chapitre des *Analytiques seconds* décrit (...) le processus psychologique de la formation de l'universel, processus qui n'est pas nécessairement conscient et qui n'apparaît pas, au moins, dirigé: Les réflexions des *Topiques*, au contraire, insistent sur le caractère méthodique du procédé inductif et mettent en évidence le 'raisonnement''. See also p. 138.

Engberg-Pedersen (1979) 307, on the other hand, writes: 'I take it, then, (...) that Aristotle has a unified conception of *epagoge*; and that the idea of inference plays no role in that conception'. The analysis of *An.Pr.* II 23 which he goes on to make cannot, in my opinion, be reconciled with the statement just quoted (see p. 311 sqq.; cf. below ch. 10 n. 6); here he in fact talks about 'the dialectical argument of *epagoge*' (p. 312).

⁸⁰ The term γνῶριζειν in *An.Post.* II 19, 100^b4 does not, therefore, mean 'come to know', which would entail that induction, according to 100^b3-4, brings us in touch with the principles. But that is how the following scholars translate the term: Ross (1949) 674; Tricot (1970) 246; Seidl 83; Kullmann (1974) 240; Barnes (1975) B 81 (cf. p. 256). Owen (1961) 86 is somewhat ambiguous: 'Ἐπαγωγή can be said to establish the principles of science by starting from the data of perception'. Is Owen here talking about finding or about establishing the principles (which in the latter case have already been found)?

The term γνῶριζειν in 100^b4 rather means to understand, to recognize as being established by something, to grasp as being plausible. The term refers therefore to the relation between something which is known and its logical basis. The term has a similar, discursively accentuated meaning in I 1, 71^a21 and II 19, 100^a28; cf. also *Met.* Alpha, 992^b30 and Gamma 2, 1004^b26. The term is similar here to μάθησις in the first sentence of *An.Post.* I 1: πᾶσα διδασκαλία καὶ πᾶσα μάθησις διανοητικὴ ἐκ προϋπαρχούσης γίνεται γνώσεως (71^a1-2).

Another possibility, however, is that the term γνῶριζειν in 100^b4 is similar to the διδασκαλία in the sentence just quoted. In that case its meaning is: study, expound, make clear, just as *An.Post.* I 3, 72^b29-30 and I 18, 81^b3-4 explicitly mention a δι' ἐπαγωγῆς γνῶρισμα ποιεῖν. The term has this meaning in *Top.* VI 1, 139^b14 (cf. Tricot (1974) 225: 'faire connaître'; Forster (1960) 563: 'to make known'); cf., parallel to 139^b14, VI 2, 140^a11: ποιεῖ γνῶριμον. Cf. furthermore VI 4, 141^a27-30 (there is a reference in this passage to *An.Post.* I 1, 71^a1-2); 141^b16 (the only place of which Bonitz says, 159^a12-14: 'alicubi γνῶριζειν videri potest idem significare ac ποιεῖν γνῶριμον, δηλοῦν); VIII 3, 158^b4. In the *Met.* γνῶριζειν is as a rule translated by 'to know' and its equivalents. Often, however, 'to expound', 'to make clear' would fit just as well. See e.g. Alpha 2, 982^b3 (cf. 982^a28: διδασκαλική); Beta 2, 997^a1; Beta 3, 998^b5 (cf. the above-mentioned places in the *Top.*); Gamma 2, 1004^b26: γνῶριστική opposite πειραστική (^b25); Gamma 3, 1005^a28 (Kirwan (1971) 6 translates here 'makes intelligible'). A reason for translating γνῶριζειν in 100^b4 as 'to make clear' is the parallel between 99^b28-29 (γνῶριζομεν / μανθάνομεν) and I 1, 71^a1-2 (διδασκαλία / μάθησις).

One might add, finally, that the solution to this problem of translation is not crucial to a correct understanding of the passage in question.

⁸¹ *An.Post.* II 19, 99^b29: ἐκ μὴ προϋπαρχούσης γνώσεως; I 1, 71^a5-7: ὁμοίως δὲ καὶ περὶ τοὺς λόγους οἳ τε διὰ συλλογισμῶν καὶ οἳ δι' ἐπαγωγῆς. ἀμφοτέροι γὰρ διὰ προγινωσκομένων ποιοῦνται τὴν διδασκαλίαν. For the various ways in which interpreters have tried to avoid this conclusion, see ch. 10.

⁸² *An.Post.* II 13, 96^b15-25. Cf. *Top.* VIII 2, 157^a24: οὕτως ἐπὶ πάντων τῶν τοιούτων; induction is a non-conclusive generalization. See also perhaps *An.Post.* II 13, 97^b7-29; in 97^b24 εἶδη means γένη. This is shown by ^b28; there τὸ καθ' ἕκαστον, the object of definition, must be the εἶδος, for no definition is possible of the individual. Cf. Tricot (1970) 223 n. 2; Owens (1964) 468.

⁸³ See e.g. *Phys.* II 2, 193^b31-35; ^b33-34: Διὸ καὶ χωρίζει.; *Met.* Kappa 3, 1061^a28-29: καθάπερ δ' ὁ μαθηματικός περὶ τὰ ἐξ ἀφαιρέσεως τὴν θεωρίαν ποιεῖται.

⁸⁴ *E.N.* VI 9, 1142^a11-20; ^a18-19: ἡ ὅτι τὰ μὲν (the mathematician's object of study) δι' ἀφαιρέσεως ἐστίν, τῶν δ' ἀρχαὶ (the principles of wisdom or of physics) ἐξ ἐμπειρίας.

⁸⁵ *Met.* Zeta 11, 1036^a31-34.

⁸⁶ *Met.* Zeta 11, 1036^a34-^b3; ^b2-3: χαλεπὸν δὲ ἀφελεῖν τοῦτον τῇ διανοίᾳ. Cf. *An.Post.* I 5, 74^a16-17.

⁸⁷ *Met.* Zeta 11, 1036^b3-7; ^b7: ἀδυνατοῦμεν χωρίσαι. Cf. *Phys.* II 2, 193^b36-194^a1.

⁸⁸ *Met.* Zeta 11, 1036^b22-32; ^b23: ἀφαιρεῖν τὴν ὕλην περιέργον. Cf. *Epsilon* 1, 1025^b30-1026^a7; *Phys.* II 2, 194^a1-12.

⁸⁹ *Met.* Zeta 11, 1037^a5-7: δῆλον δὲ καὶ ὅτι ἡ μὲν ψυχὴ οὐσία ἡ πρώτη, τὸ δὲ σῶμα ὕλη. ὁ δ' ἄνθρωπος ἡ τὸ ζῶον ((which are objects of definition)) τὸ ἐξ ἀμφοῖν ὡς καθόλου. Cf. *Met.* Zeta 10, 1035^b27-31; *De an.* I 1, 403^b7-12.

⁹⁰ At the same time this does not alter the fact that the definition leaves out of consideration the matter which characterizes the individual. Cf. *Met.* Zeta 10, 1035^b30-31: καθ' ἕκαστον δ' ἐκ τῆς ἐσχάτης ὕλης ὁ Σωκράτης ἤδη ἐστίν.

⁹¹ Cf. Oehler 236: 'es gibt in Bezug auf es ((the object of intuition)) kein konatives Verhalten, das dann möglicherweise in die Irre geht'.

⁹² *Met.* Alpha 6, 987^b1-6; Mu 4, 1078^b17-31; Mu 9, 1086^b2-7.

⁹³ See the texts cited in n. 14 and 15.

Chapter 10: Controversies

¹ The example is from *Top.* I 12.

² Ross (1949) 47-51; cf. 486. These three meanings of induction are also found in e.g. Von Fritz (1964) and Hess (1970) 48.

³ See chapter 6.

⁴ *Top.* VIII 1, 156^b17: ὅφ' ὃ πάντα τὰ ὁμοία ἐστίν.; VIII 2, 157^a24: οὕτως ἐπὶ πάντων τῶν τοιούτων.; *Met.* Iota 3, 1054^b32 sqq.: πάντα γάρ ...

Le Blond 32-33 holds that the *Top.* also discusses a complete induction. Referring to *Top.* IV 1, 120^b16 (πάντα τὰ συγγενῆ) and IV 2, 122^a17-18 (πάντα τὰ λοιπά), he says: 'Aristote insiste sur le fait que l'énumération des cas doit y être exhaustive'. It seems to me that Aristotle rather has the opposite in mind. According to the passage in IV 1, one tries to find one exception among what appear to be the particular cases of a general rule. The passage in IV 2 is concerned with making clear by induction that something is valid in all (other) cases. This does not imply, however, that all those cases must actually be enumerated by the person who is carrying out the induction. Nor does this emerge from the other texts mentioned by Le Blond. It is curious that he (p. 34 n. 2) also cites the second text referred to in order to show that in Aristotle induction often does not require a complete enumeration of cases.

⁵ *Top.* VIII 2, 157^a34-^b33.

⁶ *An.Pr.* II 23, 68^b27-28: δεῖ δὲ νοεῖν τὸ Γ τὸ ἐξ ἀπάντων τῶν καθ' ἕκαστον συγκεῖμενον. Cf. Engberg-Pedersen (1979) 313: 'what he ((Aristotle)) is wishing to bring out is what we *imply* when on the basis of attending to particular cases we assert a universal proposition' (my italics); and: 'of course without attempting to fulfill the impossible task of making sure that this claim holds true'.

One might add that, according to Aristotle, one does not gain knowledge of the essence or of the principle by means of a truly complete induction either. See *An.Post.* I 5, 74^a30-31: οὐ γὰρ ἡ τρίγωνον οἶδεν, οὐδὲ πᾶν τρίγωνον, ἀλλ' ἡ καθ' ἀριθμὸν.

⁷ Ross disregards here *Top.* VIII 1 and 2. Neither in (1977⁵) 38-41, nor in (1949) 47-51 does he discuss these important chapters.

⁸ Ross (1949) 486.

⁹ *An.Pr.* II 23, 68^b30-32: "Ἔστι δ' ὁ τοιοῦτος συλλογισμὸς τῆς πρώτης καὶ ἀμέσου προτάσεως. Le Blond considers this interpretation to be illogical. He writes (p. 127): 'si l'on admettait que dans ce chapitre sur le syllogisme inductif, Aristote a voulu nous expliquer réellement la connaissance des principes, des indémontrables, il faudrait lui attribuer

une contradiction par trop invraisemblable, en lui supposant la prétention de démontrer l'indémontrable'. And he concludes (p. 128): 'c'est donc que l'induction qui atteint les principes, même si elle peut se formuler en syllogisme, est autre chose qu'un raisonnement'.

Here Le Blond is confusing proof, which is conclusive, with induction, which is merely plausible. Next he fails to recognize that, besides a process through which one arrives at knowledge of the principle, there can also be a procedure by means of which one can argue this known principle, though not conclusively.

¹⁰ See e.g. *E.N.* VI 3, 1139^b26-31; cf. I 4, 1095^a30-^b1 and I 7, 1098^b3; see also *Rhet.* II 20, 1393^a. And further all places where induction stands opposite to syllogism, e.g. *Top.* VIII 1, 155^b35-37: ἡ γὰρ διὰ συλλογισμοῦ ἢ δι' ἐπαγωγῆς τὰς ἀναγκαίας ληπτέον, ἡ τὰς μὲν ἐπαγωγῇ τὰς δὲ συλλογισμῶ; cf. *Top.* I 2, 101^a36-37: ἔτι δὲ πρὸς τὰ πρῶτα τῶν περὶ ἐκάστην ἐπιστήμην.; I 12 and I 18, 108^b9-12. For the terminology, cf. also *An.Post.* II 19, 99^b21: τὰς πρῶτας ἀρχὰς τὰς ἀμέσους. This can hardly refer to anything else than what is indicated in almost the same words at *An.Pr.* II 23, 68^b30-32. The distinction which one might make between an ἀρχή and a πρότασις is irrelevant here. Cf. Kahn (1981) 393: 'no room for any vacillation between a conceptual and a propositional account in II 19'; cf. *An.Post.* I 23, 84^b37-85^a1.

Ross ignores the similarity between the passages mentioned and puts *An.Pr.* II 23 between brackets; (1977⁵) 41: 'we must not be too much influenced by *An.Pr.* II 23'.

¹¹ Cf. Le Blond 124. He writes, referring to R. Eucken *Die Methode der aristotelischen Forschung* (Berlin 1872) 167: 'Il est certainement curieux, ((...)) qu'Aristote emploie le terme ἐπαγωγή sans explication, comme un terme technique de signification parfaitement définie et qu'il ne s'explique jamais bien sur ses divers sens'.

¹² For a different view, cf. Von Fritz 11-16 and 43-47. He maintains, perhaps inspired by remarks in Kapp 78, that the discussion of induction in *An.Pr.* II 23 has no general validity and applies only to the example given by Aristotle. However, this appears neither from the introduction (68^b8-14), nor from the conclusion (68^b30-37) of this chapter.

¹³ Like Ross and Von Fritz, many authors give evidence of this embarrassment. See for instance Le Blond 82; Kneale (1949) 25-30; Düring 79 ('die sogenannte 'vollständige Induktion' ist ein Hirngespinnst', Aristotle's, that is); Guthrie 188. See also ch. 6 and n. 28 there.

¹⁴ Kapp 78. Besides 'intuitive induction', therefore, Kapp distinguishes only one other form of induction. Ross (1977⁵), who has inspired Kapp on this point, does roughly the same.

¹⁵ Kapp 80: 'but with Aristotle this type of induction had not been a method of discovery of principles; it was only a way of logical verification of an anticipated statement'. Cf. Le Blond 33: 'Cet examen des cas particuliers ou des espèces infimes, non précisément pour former, mais pour vérifier l'universel, est un des procédés les plus fréquemment recommandés dans les *Topiques* d'Aristote'.

¹⁶ Kapp does not discuss the connection between *Top.* VIII 2 and *An.Pr.* II 23. He writes (p. 76): 'The important question of the theoretical validity of induction is nowhere raised; for the practice of the *Topics* a merely practical rule is sufficient' (this is by the way correct, if *Top.* VIII 2 is taken by itself). But compare Kapp's statement here with what he says elsewhere (p. 78) about the use which Aristotle makes of induction in his own enquiries: 'a more-than-simple logical procedure', a procedure which Kapp links up with *An.Pr.* II 23. Cf. Gohlke 118 on the dialectical induction: 'Sonst finden wir bei unserem Philosophen weiter keine Erörterung etwa über den Grundsatz, der diese induktive Denkweise charakterisiere, oder den Rechtsgrund, auf dem logisch genommen seine Geltung beruhe'. But precisely *An.Pr.* II 23 provides this logical justification.

¹⁷ Ross 41: 'Essentially, induction is for him a process not of reasoning but of direct insight, mediated psychologically by a review of particular instances'; cf. Ross (1949) 49. It is not quite clear what Ross understands by 'intuition'. He writes 48-49: '(((...))) dawns upon us by an act of intuitive reasoning', which seems to imply a passive as well as an active attitude in the person who has intuition, there being at the same time both intuition and discursive activity. Ross 49 associates 'direct insight' (cf. (1949) 50: 'flash of in-

sight') with 'scientific imagination', a concept which is hard to situate in Aristotle's work.

But cf. on this last point Kapp 82: this form of induction 'does not represent the gropings and tentative guessings of a mind, but a certain definite way through the particulars to the universal'. Finally, Ross (1949) 86 writes: 'Aristotle is thus neither an empiricist nor a rationalist, but recognizes that sense and intellect are mutually complementary'; cf. Barnes (1975) B 248. This seems to imply that intellect, unlike sense, is not a 'faculty of apprehension'. Cf. on the other hand the conclusion which Lesher (1973) 65 reaches in relation to *An.Post.* II 19: 'The account of νοῦς of first principles which concludes the *Posterior Analytics* is therefore neither *ad hoc* nor inconsistent with Aristotle's empiricism; on the contrary, it is a consequence of it'. This is right, insofar as 'empiricism' does not mean that the mind must have sensibles as its object. Lesher is less pertinent on this point.

¹⁸ Ross (1949) 49: 'the psychological preparation upon which the knowledge of the principle supervenes. The knowledge of the principle is not produced by reasoning but achieved by direct insight — νοῦς ἂν εἴη τῶν ἀρχῶν'.

¹⁹ Ross (1949) 49 refers to *An.Post.* II 19, 100^b3; *E.N.* I 7, 1098^b3 and VI 3, 1139^b29. Hamlyn's interpretation (p. 171) of the passage from *E.N.* VI 3 differs from that of Ross.

²⁰ See for instance Hamelin 258; Le Blond 122 (cf. 138); Kapp 77 and 81-84. According to Kapp, induction as it functions in the dialogue indicates the logic and the method of the intuitive induction in *An.Post.* II 19. See further Kneale 30-31; Tugendhat 126; Patzig 138; Von Fritz 37-39 and 42-43; S. Mansion 102; Mignucci 314-315; Moreau (1962) 177; Hess (1970) 49 (but he is not certain about this point as regards *An.Post.* II 19); Barnes (1975) B 248; Hamlyn 180-183. According to Hamlyn, II 19 provides a backdrop, from the viewpoint of a genetic epistemology, to the logical procedure of induction. His view is therefore comparable to Kapp's, although Kapp proceeds from intuition and Hamlyn from the logical procedure. See, finally, Guthrie 181-183.

²¹ Ross 41.

²² *An.Post.* I 1, 71^a1-9. Cf. *Met.* Alpha 9, 992^b30-33 and *E.N.* VI 3, 1139^b26-28.

²³ *An.Pr.* II 21 and *An.Post.* I 1, discussed in ch. 9.

²⁴ Ross 55; cf. (1949) 85 and 675. He writes (1949) 85: 'Aristotle now returns to his main theme by saying that just as we reach universal concepts by induction from sense-perception, so we come to know the first principles of science'. Cf. on the other hand Barnes (1975) B 256: 'It is, I think, difficult to extract this from the text; if only because Aristotle never in B 19 makes explicit the distinction between primitive concepts and propositions'. But Ross is not the only one who maintains that this chapter is concerned with various kinds of knowledge; see e.g. Von Fritz 37-38 and Guthrie 179-181. Finally, Hamlyn fails to detect the link which exists between the πρώτας ἀρχὰς τὰς ἀμέσους (99^b21) and the ἀδιάφορα (100^a16). Precisely the latter term, however, brings out clearly the connection between this chapter and the problem of the definition. Cf. e.g. *Met.* Zeta 12, 1038^a16: ἕως ἂν ἔλθῃ εἰς τὰ ἀδιάφορα.; cf. also *An.Post.* II 13, e.g. 97^a18-19. In *An.Post.* II 13 and in *Met.* Zeta 12 Aristotle discusses the (discursive) ordering of the ἀδιάφορα or διαφοραί which one knows; *An.Post.* II 19 and *Met.* Alpha 1 are concerned with the way in which we acquire this knowledge for the first time.

²⁵ Kapp: 'For according to Aristotle induction is only comparable, not identical, with the described mental process which begins with sense-perception and results in universals. There can be no doubt of that'.

²⁶ Kapp 83-84: 'we have to distinguish between the external performance, which is entirely dependent on the questioner's purpose and his dialectical skill, and what is happening in the soul of the respondent, happening as a psychological fact but not as an act of solitary thinking'; Oehler 168 is of the same view.

²⁷ See *S.E.* 15, 174^a33-37: ((...)) διὰ τὴν τῆς ἐπαγωγῆς μνείαν. Kapp, one should add, does not appeal to this text.

²⁸ See the argumentation above, with the texts mentioned in n. 22. Cf. on the other hand the conclusion which Kapp 84 reaches: it has become clear 'how with Aristotle there could be (what modern logic denies) a logic and definite method of intuitive induction'.

²⁹ See *An. Post.* I 2 and II 19, 99^b27: the principles of the proof are true in a stronger sense than the proof itself; see more extensively ch. 9 n. 41. Cf. *Top.* I 1: in contrast to the proof, the dialectical argument does not proceed from what is known to be true and fundamental. Von Fritz takes into account the distinction between dialectic and science and decides therefore that the form of induction which leads to the principles of science must differ from dialectical induction.

Cf. Le Blond; on the one hand he writes (p. 122): 'si l'un des rôles de la dialectique est de mettre en possession des principes, c'est surtout au moyen de l'induction qu'elle y parvient'; and on the other hand he says about induction (p. 124): 'ce procédé de connaissance n'atteint que les existences et non précisément les essences: il met en possession d'un fait, et non d'une nécessité: il ne fournit pas un principe *nécessaire*'. Le Blond too concludes that the term 'induction' has multiple meanings; cf. p. 140.

³⁰ Hamlyn 171-184.

³¹ Hamlyn 182: 'it is no good using *epagoge* unless the human mind is such that it can grasp it and make use of what is revealed to it by that means'. Cf. Kahn (1981) 396-397: 'he ((Aristotle)) simply gives a partial survey of cognitive activities involving perceptual or intuitive grasp of universal principles, for which the term *epagoge* serves as a kind of unifying label'. In no way does Kahn, however, make the connection with induction regarded as a logical procedure in the dialogue. He does write in the same vein as Hamlyn (p. 404): '((...)) answer to the question: what powers must be ascribed to the human psyche if it is to be capable of induction'.

³² Von Fritz 33.

³³ Von Fritz 37-28. He talks about 'Allgemeinvorstellungen oder Begriffe' and about 'allgemeinen ἀρχαί oder Prinzipien' successively. Cf. Von Fritz (1955) 24 n. 20. Here he states that the *νοῦς* also knows the principles common to all sciences. Kahn (1981) 391 displays some reserve on this point: 'But this cannot be what he has primarily in mind in the cognition of 'primary, non-mediated principles' (99^b21) in II 19, if his explanation in terms of universals is to be regarded as relevant and coherent. It becomes fully coherent only if we take him to be accounting for our knowledge of the *archai* proper to a given science'. And Aubenque 132 n. 2 maintains: 'si l'axiome est nécessaire, nous n'en avons pas pour autant l'intuition'.

³⁴ Von Fritz 38-39. In fact his study as a whole aims at demonstrating that the universal can already be recognized by means of one case; cf. p. 17. Cf. Happ (1968) 88.

³⁵ Von Fritz 42: induction is 'eine Einsicht in einen allgemeingültigen Zusammenhang, welcher durch Heranführen an einen einzigen Fall unmittelbar als allgemeingültig evident wird, und nicht, wie oft angenommen worden ist, eine Art Schlussverfahren wie bei dem in *Analytica Priora* erwähnten epagogischen Syllogismus'. Thus Von Fritz wholly detaches what he calls 'induction' from any kind of logical procedure whatsoever. In this regard he does more justice to *An. Post.* II 19 than Kapp and Hamlyn. For a similar but slightly exaggerated view, cf. Schmidt (1974) 151: 'Die Epagoge in ihrer prinzipiellen Bedeutung hat pathetischen Charakter. ((...)) Sie ist irrational, noetisch strukturiert und deshalb ein unmittelbarer, plötzlicher, ingeniöser Akt des "Findens"'.

³⁶ *An. Post.* II 19, 100^b3-5. Kapp and Hamlyn are more perceptive on this point. It is regrettable that Von Fritz does not enter into a discussion with Kapp here, by whom he is inspired more than once in his study; cf. 54-55.

³⁷ Cf. Von Fritz 55-56: 'die logische Maschine im Leerlauf bleibt, wenn nicht zu Anfang etwas hineingetan wird, das nicht selber aus der Maschine stammt'.

³⁸ Von Fritz 37-38.

³⁹ Ross 40: 'the form ((...)) separated in thought from the matter'. He speaks about an 'activity of intellection' and refers to the *νοῦς* in *De gen. an.* II 3, 736^b28. Ross seems to be thinking here of the mind in *De an.* III 5, where, according to a number of interpreters, an abstracting mind is concerned. But the relevant chapter in Ross 148-153 does not make this clear at all.

S. Mansion 102 writes: 'Ces deux sortes d'induction sont de nature assez différente. La première est ce que les scolastiques appellent la 'simple appréhension' ou l'abstraction

((...))'; on p. 102 she makes the connection with *De an.* III 4 and 5; cf. pp. 140-142.

Guthrie 182 writes: knowledge is produced 'by the familiar process of abstracting the simple *eidos* informing all the particulars'; p. 183: '((...)) until experience (memory plus *logos*) has enabled us to abstract and unite them'. Guthrie is therefore referring to a discursive procedure; cf. p. 103: 'examining the things around him in order to abstract, by means of a logical analysis, certain common features'; on pp. 183-194 he works out in detail the relation between abstraction, induction, and intuition.

Gohlke's views on abstraction and induction in Aristotle are less relevant, in my opinion.

⁴⁰ Le Blond 134-135. He refers to 100^a13-14 and writes: 'St. Thomas, sans doute, dans son commentaire, veut voir mentionnés là, non seulement l'intellect *possible*, mais même l'intellect *agent* (i.e. the mind which performs the abstraction, according to Thomas): il faut reconnaître que cette interprétation n'est ni commandée, ni même tolérée'. One might add that Le Blond (1979) 64-65 does speak of 'an intuitive capacity for abstraction' and considers this abstraction to be the work of the active mind from *De an.* III 5.

⁴¹ Von Fritz 38: 'wirklich als solches enthalten ist'; cf. Berti (1978) 158: 'Aristotle's position is not to be sure an empiricism like that of Locke, of Hume or of Kant himself, since it does not exclude an intellectual knowledge of essences understood as unities that are given and not simply produced by the intellect with an act of synthesis'.

⁴² Von Fritz 38.

⁴³ Cf. Von Fritz 15 n. 19 and 46 n. 64.

⁴⁴ Ross 55 and (1949) 85; Le Blond 131; Kapp 77; S. Mansion 141; Oehler 169; Tricot (1970) 247; etc. Barnes (1975) B 256, who rejects 'intuition', discusses the traditional translation and writes in this connection: 'therefore, the *nous* of B 19 is a sort of perception; and if that is so, we can hardly jib at the translation "intuition"'.

⁴⁵ E.g. Le Blond 46 n. 5; S. Mansion 143: 'cette appréhension suppose des raisonnements et même des syllogismes'; Weil 297; Oehler 167: '((...)) aber kein reiner Intuitionismus. ((...)) Sinneswahrnehmung, Vorstellung, Gedächtnis, dianoetisches und noetisches Denken vereinigen ihre Funktionen in dem aufsteigenden Prozess der Abstraktion'. Seidl 85 is equally imprecise: 'Wir sagen vielleicht besser, dass der Intellekt die Prinzipien 'nicht diskursiv', als dass er sie 'intuitiv' erfasst'; cf. Seidl 91-93 notes 15 and 18.

⁴⁶ Berti (1978). Viewed in this light, it is somewhat curious that he considers (p. 156 n.54) the work of Von Fritz to be the best study of induction. He writes: '((...)) leads us to rule out any form of intuitionism from Aristotle's thought' (p. 143); 'Thus the intellection of incomposite realities is not necessarily an act that is easy, immediate, direct, but is the end point of a search' (p. 150); 'it is only in the case of God that one can talk of an Aristotelian intuitionism' (p. 153); *νοῦς* 'is not an intuition in the strict sense, that is a knowledge which is immediate, direct, accessible at once. It is rather one that presupposes a process of research' (p. 158); 'one cannot attribute to Aristotle, as various interpreters have done, an intuitionism of the Platonic sort, consisting in a direct knowledge of immaterial realities which does not pass through experience' (p. 158).

Berti here is only correct in his view that intuition in Aristotle crowns a process of experience. But experience in Aristotle does not imply an actively performed enquiry, nor any kind of discursive activity. For where the first principles have not yet been found, such activity and such an enquiry can only be dialectical. Berti also fails to recognize that, according to Aristotle, man bears some resemblance to God precisely on the score of intuition. See *Met.* Lambda 7, 1072^b18-26; ^b25: ὥς ἡμεῖς ποτέ, ὁ θεὸς αἰεί.; cf. *De an.* III-4, 430^a5: μὴ αἰεὶ νοεῖν (said of the human mind) and III 5, 430^a22: οὐχ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ (said of the mind of God; but the interpretation of the last texts is controversial; see extensively part III of this study).

Neither do other authors believe that man knows intuitively according to Aristotle. See e.g. Wieland 63: 'Wären die Prinzipien aber unmittelbar einsichtig, so wäre ja eine Prinzipienforschung, die sich der Dialektik als Hilfsmittel bedient, überflüssig. Daher beweist schon allein die Tatsache, dass auch die Prinzipienforschung noch eines

Hilfsmittels bedarf, dasz die Prinzipienerkenntnis nicht unvermittelt intuitiv sein kann' (Hess (1970) 50-51 disagrees with Wieland); Barnes (1975) B 257-259; 259: "'intuition' as a mode of discovery is absent from APst'; Barnes refers to Wieland (1962), Kosman (1973), and Leshner (1973). See also Hamlyn 167-184; Couloubaritis (1980) A and, finally, Burnyeat (1981) 131: 'A faculty for intuitive discovery is not needed because discovering or coming to know (γινώσκειν, 100^b4) first principles is a matter for induction'; cf. pp. 118-119.

⁴⁷ See this chapter, above; cf. ch. 9 n. 43. See also Berti (1978) 156 n. 56.

⁴⁸ Cf. Le Blond 134 on ἐμπειρία in *An. Post.* II 19: 'Rien, surtout, n'y fait allusion à une activité proprement dite, qui serait le fait de l'esprit: au contraire, les expressions employées suggèrent la passivité de l'âme; il est remarquable, en effet, qu'Aristote ne dit nulle part en ces développements que c'est l'esprit qui abstrait, qui fait l'universel'.

Le Blond, however, is at a loss what to do with the νοῦς in II 19. For νοῦς in his view is neither 'un pur mécanisme sensible, où la méthode et la réflexion n'ont aucune part', nor 'une condensation réfléchie des expériences', belonging therefore to 'l'ordre du discours, de la διάνοια'.

Le Blond then writes (p. 139): 'En fait, ce qui le conduit à cette affirmation de l'intuition des principes, c'est sa théorie de la science déductive, du syllogisme tout entier suspendu à la vérité de ses prémisses: C'est pour cela qu'il faut que ces prémisses, ces principes soient connus infailliblement, parce que la cause doit être mieux connue que l'effet'.

⁴⁹ Cf. Weil and Barnes (1975) A.

⁵⁰ Cf. Hamelin 235: 'Mais les opinions ne remplacent pas pour cela l'intuition intellectuelle'. Otherwise 'il aurait contredit la distinction capitale qu'il a si définitivement aperçue et posée entre la dialectique et la science'. And (p. 234): 'Si donc la dialectique sert à l'établissement des principes, ce ne peut être qu'indirectement'. So that 'la vraie doctrine d'Aristote sera toujours celle que résume la proposition célèbre: λείπεται νοῦν εἶναι τῶν ἀρχῶν (Eth. Nic. VI, 6 fin)'. Le Blond 45 contrasts Hamelin's views with those of Thurot. The latter says, according to Le Blond: 'A peu près partout ((in Aristotle's work)) les principes sont établis dialectiquement'. Le Blond 45-47 is more inclined to agree with Thurot.

Aubenque 297 n. 3 also contrasts Thurot and Hamelin. Their views are not mutually exclusive, however. The important thing is to distinguish between:

- 1) the (intuitive) knowledge of the principles, by means of which the principles obtain a (non-logical) foundation in reality and are thus for the first time recognized and acquired as principles of science.
- 2) the (discursive) argumentation of principles or orientation of what might be principles, by means of which principles obtain a logical foundation, albeit a dialectical kind of foundation. Dialectic, therefore, can help to find a principle of science and it can also provide the principle, once it has been found, with dialectical argumentation. This does not alter the fact, however, that intuition alone grants scientific validity to the principle of science, albeit by establishing this principle in a non-logical sense.

But Aubenque (1979) 87 causes confusion by calling dialectic: 'substitut d'une intuition incapable de se légitimer elle-même' (cf. (1962) 496 sqq.). In my view, Aristotle introduces intuition precisely when he discovers that any attempt at justification is ultimately doomed to fail, since it can either be carried on indefinitely, or is only ended by deferring to convention. Only by introducing intuition can Aristotle save ἐπιστήμη.

However, according to Aubenque (1979) 87 (cf. (1962) 55, 62, etc.), ignoring chapters such as *An. Post.* II 19, *De an.* III 4, and *Met.* Lambda 7, Aristotle holds or at least gradually arrives at the view that man is not capable of this intuition; cf. Moreau (1961) 33. This cannot be maintained, in my opinion; cf. again ch. 8 n. 9 and this ch. n. 46: the view that Aristotle does not attribute intuition to man is caused by a misconception about the object of this intuition.

Part Two: Aristotle's epistemology

Chapter 1: Logic, epistemology, and psychology

¹ Thus for instance Gohlke 99: 'psychologische Theorie der Abstraktion'; Solmsen 107 sqq.; Le Blond 146; Kapp 77: 'a psychological fact'; 82: 'mental process'; 84: 'psychological explanation'; Ross 41: 'mediated psychologically'; (1949) 49: 'psychological preparation'; Von Fritz (1955) 22 n. 17; Hess (1970) 50 n. 9; Ackrill (1981) 110: 'a psychological essay'.

² E.g. Gohlke (1914).

³ Hamlyn 171: 'epistemology', instead of 'psychology'; p. 175: 'genetic epistemology'; cf. 180, 182.

⁴ Rohde II 307: 'Die Thatsache ((that man has νοῦς)) schien sich darin kundzugeben, dass dem Menschen ein springendes Ergreifen eines unbeweisbaren obersten Erkenntnisinhaltes möglich ist, nicht infolge der denkenden Thätigkeit seiner "Seele", der dieses Ergreifen schon vorausliegt, aber nur durch Kraft eines höheren Geistesvermögens, eines eigenen Geisteswesens, dessen Sein und Dasein im Menschen sich eben anzukündigen schien. Eine Erkenntnistheoretische, nicht eine theologische Betrachtung führte zu der Unterscheidung des "Geistes" von der "Seele"'.
Gohlke 77: 'Wir stehen hier bereits am Ende rein logischer Betrachtung; denn wie sich die zuletzt angeführte Anmerkung mit der bestimmten Behauptung verträgt, alle Begriffe seien allgemein, das kann nur mit Hilfe der Erkenntnistheorie des Philosophen auseinandergesetzt werden'. Von Fritz (1955) 33: 'was die ἀξιώματα zu Axiomen im strengen Sinn des Wortes macht, wie es von Aristoteles in den *Analytics* und später von den Mathematikern gebraucht wird, liegt nicht ursprünglich in der Bedeutung dieses Wortes, sondern folgt aus der Analyse der Eigenschaften, welche die grundlegenden Ausgangssätze einer jeden beweisenden Wissenschaft haben müssen'; p. 102: 'ist es ein einzelner, Aristoteles, gewesen, der zuerst nachzuweisen suchte, dass und warum jede beweisende Wissenschaft von unbeweisbaren Prinzipien ausgehen muss, und der dann systematisch untersuchte, welche Eigenschaften solche Prinzipien haben müssten (...)'.
Without properly realizing, apparently, that it is the pivot on which logic and epistemology turn in Aristotle, some scholars maintain that the introduction of a non-logical cognition is a weak point in the Aristotelian philosophy. See for example Scholz 58: 'when modern axiomatic theory finally rejected the evidence postulate in favour of a rigorously formulable postulate of consistency, it made one of its most important advances over Aristotle'. Scholz's view that 'he ((Aristotle)) was well aware of the inadmissibility of his answer' (namely the reference to an "intellectual intuition" (*nous*')) seems to me quite untenable.

Cf. Von Fritz (1955) 103: 'Wirft man einen Blick voraus auf die moderne Mathematik, so zeigt sich, dass die einflussreichste Schule der Mathematiker Aristoteles' Forderung, dass alles auf selbstevidente und absolut einsichtige Prämissen zurückgeführt werden müsse, verwirft, da kein Kriterium für das Selbstevidente zu finden sei, und sich auf die Widerspruchsfreiheit des Systems zurückzieht'. Finally, Le Blond writes (p. 122 n. 1), in reference to Eucken (1872) 33: 'c'est la connaissance des principes, (dit-il), qui est 'le point faible' de l'aristotélisme'.

In short, Aristotle, having assumed the limited nature of the logical sphere, wishes to provide logical operations with a non-logical starting-point and foundation, whereas in this situation modern axiomatical theory, which only accepts logical criteria of truth, tries to stay within the logical sphere.

⁵ See note 4.
⁶ Aubenque 165-166; 165: 'conception ontologique de la vérité', 'vérité anté-prédicative'; cf. Moreau (1961).
⁷ See Kapp 9-10.
⁸ See part I ch. 10.
⁹ Cf. *De an.* I 1, 403a25-b19.

¹⁰ Le Blond 146 *ad. An. Post.* II 19: 'mécanisme psychologique'; Joachim (1951) 199, also *ad* II 19, understood as a psychological chapter: 'from the external and mechanical

point of view'; Moreau (1962) 177: 'de façon machinale'; Hamlyn 176, 179; Nussbaum 256.

Von Fritz 55, on the other hand, calls logic mechanical, in contrast to intuition: 'die logische Maschine' / 'Fehlbarkeit der menschlichen "Subjektivität"'. According to Aristotle, one might add, it is so that intuition does *not* err; cf. part 1 ch. 9 n. 41.

¹¹ *De an.* I 2, 404^a27-31 (cited below, ch. 2 n. 1).

Chapter 2: Epistemology in Aristotle's psychological work

¹ *De an.* I 2, 404^a27-31; ^a30-31: οὐ δὲ χρήται τῷ νῷ ὡς δυνάμει τινὶ περὶ τὴν ἀλήθειαν, ἀλλὰ ταῦτὸ λέγει φυγὴν καὶ νοῦν.

Cf. I 2, 405^a8-13. On 404^a30-31, see Hicks 219.

² *De an.* I 3, 407^a14-17; ^a15-17: εἰ δ' ἱκανὸν θιγεῖν ὁπωσοῦν τῶν μορίων, τί δεῖ κύκλω κινεῖσθαι, ἢ καὶ ὅλως μέγεθος ἔχειν; Cf. Plato *Tim.* 37 a-b.

³ *De an.* I 3, 407^a32-33: ἔτι δ' ἡ νόησις ἔοικεν ἡρεμῆσει μᾶλλον ἢ κινήσει.

⁴ Rodier 114 too refers to *An. Post.* II 19, 1006^asq. Cf. *Phys.* VII 3, 247^b10 sq.

⁵ *De an.* II 6, 418^a11-14; ^a11-12: λέγω δ' ἴδιον μὲν ὃ μὴ ἐνδέχεται ἐτέρᾳ αἰσθῆσαι αἰσθάνεσθαι, καὶ περὶ ὃ μὴ ἐνδέχεται ἀπατηθῆναι.

Cf. III 3, 427^b11-12: ἡ μὲν γὰρ αἴσθησις τῶν ἰδίων αἰεὶ ἀληθής.; *De sensu* 4, 442^b8-10. In *De an.* III 3, 428^b18-19 Aristotle displays some reserve on this point; ^b19: ἢ ὅτι ὀλίγιστον ἔχουσα τὸ φεῦδος. See Block (1961) 3 and 6-8; 6: 'So the eye, when working normally, sees accurately, i.e. it sees the true colour of the object' (my italics).

⁶ *De an.* III 1, 425^a30-^b4; ^b2-3: οὐ γὰρ δὴ ἐτέρας γε τὸ εἰπεῖν ὅτι ἄμφω ἔν.; cf. II 6, 418^a20-24; III 1, 425^a21-27 and III 3, 428^b19-22.

⁷ *De an.* III 1, 425^a30-^b1: τὰ δ' ἀλλήλων ἴδια κατὰ συμβεβηκὸς αἰσθάνονται αἱ αἰσθήσεις, οὐχ ἡ αὐταί, ἀλλ' ἡ μία, ὅταν ἅμα γένηται ἡ αἴσθησις ἐπὶ τοῦ αὐτοῦ. And likewise III 2, 426^b20-21: δεῖ δὲ τὸ ἐν λέγειν ὅτι ἕτερον. ἕτερον γὰρ τὸ γλυκὺ τοῦ λευκοῦ Cf. *De sensu* 7, 447^b26 sq. and 449^a2-20; *De somno* 2, 455^a33-34: τοῦ γὰρ κυρίου τῶν ἄλλων πάντων αἰσθητηρίου καὶ πρὸς ὃ συντείνει τάλλα.

⁸ *De an.* III 1, 425^b3-4. The term 'association' is also used in this connection by Ross (1961) 271 *ad* 425^a20-^b11: sensation of the ἴδια takes place 'apart from any dependence on association of ideas', in contrast to the kind of sensation described in 425^a21-27. Cf. Tricot (1977) 149 n. 5 and Cashdollar 165: 'If the above account of what constitutes incidental perception is accurate, then the second term of the percept has to be a stored image which is spontaneously 'associated' with the properly received first term'. Graeser 90-91 speaks of an 'association of ideas'; likewise Block (1960) 94. In reference to *De an.* III 3, Schofield 117 talks about 'an interpretative sort of perception'.

⁹ *De an.* II 6, 418^a17-20; ^a18-19: τὰ γὰρ τοιαῦτα οὐδεμιᾶς ἐστὶν ἴδια, ἀλλὰ κοινὰ πάσαις. Cf. III 1, 425^a14-21; III 3, 428^b22-25; *De sensu* 1, 437^a5-9; 4, 442^b4-10.

¹⁰ *De an.* II 6. This seems to be contradicted by III 1, 425^a14-15: ἀλλὰ μὴν οὐδὲ τῶν κοινῶν οἶόν τ' εἶναι αἰσθητήριόν τι ἴδιον, ὦν ἐκάστη αἰσθῆσει αἰσθανόμεθα κατὰ συμβεβηκός. Aristotle, however merely wishes to convey that a particular sense, precisely inasmuch as it is particular, does not have the common sense-data as its object. Cf. Hamlyn (1968) 117 *ad* 425^a14: 'Aristotle says that we perceive them by each sense incidentally (sc. by each special sense incidentally), and that there is no special sense ((i.e. a sixth special sensation) for them'. See also Hamlyn (1959) 13-15 and Ross (1961) 269 *ad* 425^a14-30. Rodier 353 *ad* 425^a15 on the other hand states: 'Aristote ((...)) n'expose pas ici ses propres idées'; cf. Theiler 131 *ad* 425^a14 and Kahn (1979) 9. This interpretation is not sound; the objection which Aristotle makes applies to the existence, in this case, of an αἰσθητήριόν τι ἴδιον (^a14), whereas with ὦν ἐκάστη etc. he is only giving a further indication of what he understands by the κοινά. This is also the view of Hicks *ad* 425^a15. On the other hand Rodier 358 *ad* 425^a21 too maintains 'que les sensibles communs ne sont pas pour nous des sensibles par accident, parce qu'ils exercent une action sur eux ((upon the particular sensations)), ce que ne font pas les sensibles par accident'.

Cf. *De an.* III 1, 425^a27-28: τῶν δὲ κοινῶν ἥδη ἔχομεν αἰσθήσιν κοινήν, οὐ κατὰ συμβεβηκός.

Some authors hold that the κοινή αἰσθήσις from the last-cited passage is the κοινή δύναμις ἀκολουθούσα πάσαις, ἥ καὶ ὅτι ὁρᾷ καὶ ἀκούει αἰσθάνεται (*De somno* 2, 455^a16-17), i.e. the αἰσθήσις ἢ μία or τὸ κύριον αἰσθητήριον (455^a20-22). Thus e.g. Hicks 425-426 and 431 *ad* 425^a27; cf. Ross (1961) 33-36.

But there can be no doubt that Aristotle is talking about something which is perceived by each particular sensation individually and not by the sensations-as-one, for he holds that the whole purpose of there being various particular sensations lies in the fact that the kind of sense-objects referred to is not merely perceived by one kind of sensation (*De an.* III 1, 425^b4-11). This argument would be pointless if these objects were perceived by sensation-as-one. This is also the interpretation of Hamlyn (1968) 128 *ad* 427^a9: 'these senses form a unity *only* in that they have these objects in common', so that there is no question of a 'unified faculty of sense' in this case; cf. Hamlyn (1968) B 196. Unambiguous is *De sensu* 4, 442^b6-7: ((...)) κοινὰ τῶν αἰσθήσεων ἐστίν, εἰ δὲ μὴ πασῶν ἄλλ' ὅψεως γε καὶ ἀφῆς. Cf. also Kahn (1979) 8-9 and 17 n. 48, likewise versus Ross.

On the other hand Hamlyn creates perhaps a misunderstanding by stating (1968) 117 *ad* 425^a14 'that there is in fact a common sense, i.e. a sense shared by different sense-organs and one to which the common objects are essential'. Cf. Ross (1961) 271 *ad* 425^a20-^b11: 'a perceptive power inherent alike each of the five senses'; and Hamlyn (1959) 15 and (1968) B 204: 'Now, the *koine aisthesis* as the sense concerned with the *koine* is undoubtedly a sense, although not a special one'. However, it is these particular sensations *themselves* that carry out this perception. Cf. Hamlyn (1968) B 204: 'Rather the *koine aisthesis* is a potentiality possessed by each of the individual sense-organs, or at least by that of sight and touch'.

¹¹ *De an.* III 1, 425^b4-11.

¹² *De an.* III 3, 428^b22-25; ^b24-25: περὶ ᾧ μάλιστα ἥδη ἐστὶν ἀπατηθῆναι κατὰ τὴν αἰσθήσιν. Cf. *De sensu* 4, 442^b4-10.

¹³ Cf. *De an.* III 3, 428^b27-30.

¹⁴ *De an.* III 6, 430^a26-28.

¹⁵ *De an.* III 6, 430^b26-29; III 7, 431^a8.

¹⁶ *De an.* III 7, 431^a8: τὸ μὲν οὖν αἰσθάνεσθαι ὅμοιον τῷ φάναι μόνον.; for the expression τὸ φάναι μόνον, cf. *Phys.* VIII 1, 252^a22-25; *Met.* Theta 10, 1051^b22 sqq.

¹⁷ *De an.* II 5, 417^b22-23.

Part Three: Aristotle's psychology of cognition

Chapter 1: Cognition as the object of psychology

¹ Cf. part II ch. 1 n. 10.

² My hypothesis finds some support in Nuyens, Oehler, Guthrie, and Couloubaritsis (1980) B.

Nuyens 300 and 306 says of the mind called ποιητικόν in *De an.* III 5 that it is 'quelque chose d'extrinsèque à l'âme humaine'. Few authors have examined the position which Nuyens adopts on this point. Cf. Lefèvre 11-12; 'La plupart des critiques n'ont accordé que très peu d'attention aux développements touchant ce problème' — he is referring to the noetic problem. Oehler 207-208 does not use *De an.* III 5 at all in his discussion of human cognition. Guthrie 322 writes in reference to *De an.* III 5: 'at the present day the idea that Aristotle has the divine *Nous* in mind is almost universally rejected'; and (p. 315): 'I shall be rash enough to follow a train of thought different in some respects from most if not all others'. Also important in this connection, finally, is the hypothesis of Couloubaritsis (1980) B 184-185. In his view the following are identical: a) the νοητά which the human mind knows (see *De an.* III 4); b) the ἄλλος νοῦς in frg. VI of Theophrastus (cited ch. 9 n. 3); c) the ποιητικόν in *De an.* III 5; and d) the νοῦς θύραθεν in *De gen. an.* II 3. But in his study he does not work out this hypothesis with regard to c). On the hypothesis of Couloubaritsis, see further ch. 8 n. 10.

Chapter 2: Psychology of sensation

¹ *De an.* II 5, 416^b33-34: ἡ δ' αἰσθησις ἐν τῷ κινεῖσθαι τε καὶ πάσχειν συμβαίνει, καθάπερ εἴρηται. δοκεῖ γὰρ ἀλλοίωσιν τις εἶναι.; II 4, 415^b24-25. Cf. I 5, 410^a25-26: τὸ δ' αἰσθάνεσθαι πάσχειν τι καὶ κινεῖσθαι τιθέασιν. ὁμοίως δὲ καὶ τὸ νοεῖν τε καὶ γινώσκειν.; *De gen. et corr.* I 8, 324^b25-32.

Rodier 248 *ad* 416^b34 writes: 'il ne faut pas considérer ce qu'il dit ici comme exactement exprimant sa propre opinion'. Hicks 349-351 is just as reserved. Cf. on the other hand Ross (1961) 24: 'He speaks of it ((sensation)) as an ἀλλοίωσις, i.e. a being altered (415^b24, 416^b34) and as consisting in a being moved and acted upon (416^b33, 417^a14-20, 418^a5-6)'. Hamlyn (1968) 97 writes *ad* 415^b21: 'The statement that perception is thought to be a form of alteration, though often repeated, is eventually contradicted at 431^a5'; cf. Hamlyn (1959) 6. Hamlyn fails to recognize here that Aristotle distinguishes between two kinds of alteration and affection and that in 431^a5 only one of these kinds is rejected in connection with sensation. See further this ch. n. 6.

² *De an.* II 4, 415^b24-25: ἡ μὲν γὰρ αἰσθησις ἀλλοίωσιν τις εἶναι δοκεῖ, αἰσθάνεται δ' οὐθὲν ὁ μὴ μετέχει ψυχῆς.

³ *De an.* I 1, 402^b10-16: τὸ αἰσθητικόν, τὸ αἰσθάνεσθαι, τὰ ἀντικείμενα.; II 4, 415^a14-22.

⁴ *De an.* I 2, 404^b8-18 and 405^b13 sqq.; I 5, 409^b24 sqq.; I 5, 410^a23 sqq.

⁵ *De an.* II 5, 417^a17-20: πάντα δὲ πάσχει καὶ κινεῖται ὑπὸ τοῦ ποιητικοῦ καὶ ἐνεργείᾳ ὄντος. διὸ ἔστι μὲν ὡς ὑπὸ τοῦ ὁμοίου πάσχει, ἔστι δὲ ὡς ὑπὸ τοῦ ἀνομοίου, καθάπερ εἵπομεν. πάσχει μὲν γὰρ τὸ ἀνόμοιον, πεπονθὸς δ' ὁμοίον ἔστιν.

⁶ *De an.* II 5, 418^a3-6: τὸ δ' αἰσθητικὸν δυνάμει ἐστὶν οἷον τὸ αἰσθητὸν ἤδη ἐντελεχείᾳ, καθάπερ εἴρηται. πάσχει μὲν οὖν οὐχ ὅμοιον ὄν, πεπονθὸς δ' ὁμοίωται καὶ ἔστιν οἷον ἐκεῖνο.

Cf. II 7, 419^a17-18: πάσχοντος γὰρ τι τοῦ αἰσθητικοῦ γίνεται τὸ ὁρᾶν.; III 2, 426^a9-11: ὥσπερ καὶ ἡ ποίησις καὶ ἡ πάθησις ἐν τῷ πάσχοντι ἀλλ' οὐκ ἐν τῷ ποιοῦντι, οὕτω καὶ ἡ τοῦ αἰσθητοῦ ἐνέργεια καὶ ἡ τοῦ αἰσθητικοῦ ἐν τῷ αἰσθητικῷ.; *De sensu* 2, 438^b22-23: τὸ γὰρ αἰσθητὸν ἐνεργεῖν ποιεῖ τὴν αἴσθησιν.; 3, 440^a18-20; *Met.* Gamma 5, 1010^b36-1011^a2. Cf. Ross (1961) 24: 'Perception is for Aristotle essentially something passive'.

In this note and the following I shall discuss the controversy which exists on this point.

1. Rodier 260 *ad* 417^b16 writes: 'Dès sa première rencontre avec le sensible, elle ((sensation)) agira et deviendra sensation en acte'; and (p. 261 *ad* 417^b20): 'Le sensible ne fait que réaliser dans le sensorium les conditions qui permettront à la sensibilité de s'exercer'. Rodier cites Simplicius 124,3: ἅπερ ποιητικὰ τῆς ἐνεργείας λέγεται, οὐχ ὡς ἐμποιοῦντα τὴν κρίσιν, ἀλλ' ὡς πάθος τι ἐν τῷ αἰσθητηρίῳ, ἐφ' ᾧ κριτικὴ ἐγείρεται ἐνέργεια.

We find the same train of thought in Hamlyn (1968) 103-104 *ad* 418^a3: 'It would seem, therefore, that what Aristotle usually meant to say was that the sense-organ ((instead of the 'faculty of perception')) is potentially such as the object of perception is actually'. Where Aristotle speaks of a πάσχειν, according to Hamlyn (1959) 6, there is only sensation; but perception presupposes κρίσις, 'judgement'. Hicks 358 *ad* 417^b20, after rendering the text from Simplicius also cited by Rodier, makes the following remark: 'But it will be presently explained (424^a24-28) how the two, organ and faculty, are inseparably connected'. Hamlyn (1959) maintains, however, that Aristotle regards sensation as ἀλλοίωσιν τις and as a kind of πάσχειν on the one hand, and as κρίσις, 'judgement', on the other. He suggests (p. 6; cf. (1968) 136 *ad* 429^a13) that we see here a development in Aristotle's thought within the *De anima*, albeit that a contradiction remains: 'the resulting uneasy compromise between two opposed views of *aisthesis* was handed down to his successors'.

But there can be no question of a development in the *De anima* on this point. In III 4, 429^a14 Aristotle is still talking about πάσχειν in connection with sensation and a form of it is presupposed in the whole theory which he subsequently draws up with regard to νοεῖν. Hamlyn (1959) 6 and (1968) 97 is wrong to see in *De an.* III 7, 431^a5 (οὐ γὰρ πάσχει οὐδ' ἀλλοιοῦται) a rejection of every kind of πάσχειν whatsoever. For immediately prior to this passage Aristotle says: φαίνεται δὲ τὸ μὲν αἰσθητὸν ἐκ δυνάμει ὄντος τοῦ αἰσθητικοῦ ἐνεργείᾳ ποιοῦν. The object of sensation, therefore, affects the faculty of perception. This is a cer-

tain kind of alteration, namely ἐπὶ τὰς ἑξεις καὶ τὴν φύσιν (II 5, 417^b16). See also *Phys.* VII 3, 245^b3-5; 417-19.

Once produced, however, sensation is, instead of τοῦ ἀτελοῦς ἐνέργεια, τοῦ τετελεσμένου ἐνέργεια (III 7, 431^a6-7). It is an action which is perfect once it takes place and which does not, like a movement, approach its completion. Cf. *Met.* Theta 6, 1048^b16-35; Ackrill (1965).

Hamlyn (1959) 7 states, referring to a passage from *De an.* II 12: 'it is a necessary but not a sufficient condition (cf. 424^b17) of perception that something should be said to πάσχειν something'. But the argumentation as a whole in II 2 shows that sensation is nothing but affection or passivity; see esp. 424^a21-25; 424^b1-3; 424^b7-8: οἷόν τε πάσχειν ὑπ' ὁσμῆς; 424^b14-16. Finally, Aristotle asks the question: τί οὖν ἐστὶ τὸ ὁσμᾶσθαι παρὰ τὸ πάσχειν τι; (424^b17). After what has gone before, the answer must be: 'nothing'. But Aristotle continues: ἡ τὸ μὲν ὁσμᾶσθαι καὶ αἰσθάνεσθαι, ὁ δ' ἄηρ παθὼν ταχέως αἰσθητὸς γίνεταί; (424^b17-18). For a qualification is necessary: it is true, apparently, that not only tangible objects and flavours affect the body (which in this case consists of air), but also smell, so that in the latter case too it is not smell but that which has smell that affects the body (424^b10-11: οὔτε γὰρ φῶς καὶ σκότος οὔτε φῶς οὔτε ὁσμὴ οὐδὲν ποιεῖ τὰ σώματα, ἀλλ' ἐν οἷς ἐστίν); however, this πάσχειν does not yet indicate what ὁσμᾶσθαι and in general αἰσθάνεσθαι is, for so far only the affection or passivity of something on a corporeal level has been discussed. This affection is attended (424^b18: ταχέως; cf. *De sensu* 2, 437^a27-29: εἰ γὰρ μὴ ἔστι λανθάνειν αἰσθανόμενον καὶ ὁρῶντα ὁρώμενόν τι, ἀνάγκη ἔρ' αὐτὸν ἑαυτὸν ὁρᾶν τὸν ὀφθαλμόν.; 6, 445^b29-446^a3; 7, 448^a19-448^b27) by the sensation proper, the undergoing of the smell as such: ἡ αἰσθησις ἐκάστου ὑπὸ τοῦ ἔχοντος χρώμα ἢ χυμὸν ἢ φῶς πάσχει, ἀλλ' οὐχ ἡ ἐκαστον ἐκεῖνων λέγεται, ἀλλ' ἡ τοιοῦδ' καὶ κατὰ τὸν λόγον (424^a22-24; my emphasis). The affection or passivity is not restricted to the corporeal level, therefore. Cf. also II 10, 422^b2-3: πάσχει γὰρ τι ἡ γεῦσις ὑπὸ τοῦ γευστοῦ, ἡ γευστόν.; III 2, 427^a8-9: τὰ εἶδη πάσχειν αὐτῶν, εἰ τοιοῦτον ἡ αἰσθησις καὶ ἡ νόησις. Thus when Aristotle says: αἰσθησις ἐστὶ τὸ δεκτικὸν τῶν αἰσθητῶν εἰδῶν ἄνευ τῆς ὕλης 424^a18-19), then τὸ δεκτικὸν is τὸ παθητικὸν and τὸ αἰσθητὸν is τὸ ποιητικὸν (for this terminology, cf. III 2, 425^b26-426^a19).

Aristotle's text, then, does not provide a reason for turning things around and saying that in sensation the faculty of sensation acts upon its object. Therefore Nussbaum 257 is right in speaking of 'the passive character of Aristotelian *aisthesis*' (cf. p. 258).

On the passage just dealt with, cf. in contrast Rodier 336 *ad* 424^a12-18: 'la passivité dans le sujet sentant n'est que la condition de la sensation qui en elle-même n'est pas passivité mais développement spontané des facultés du sujet'; Hicks 421 *ad* 424^b18; Ross (1961) 267; Barbotin 66; Hamlyn (1968) 115. They all fail to explain convincingly how the corporeal-psychical phenomenon of sensation would move in opposite directions on the psychical and the corporeal levels respectively. We shall see further on that the material medium transports the form, i.e. the actual object of knowledge, to the sensory faculty which belongs to the soul.

2. Next Hamlyn maintains that Aristotle uses the term κρίσις in the sense of 'judgement' and Hamlyn speaks about 'his becoming more and more insistent on the connexion of aisthesis with judgement', (1959) 8. Cf. the above quotation from Simplicius, who also distinguishes between πάθος τι ἐν τῷ αἰσθητηρίῳ and ἡ κριτικὴ ἐνέργεια and in doing so rejects the idea of an ἐμποιεῖν τὴν κρίσιν. And Hamlyn writes: 'Perhaps the most clear account of aisthesis in this light is to be found in *An. Post.* 99^b35'. Also Rodier 264 *ad* 418^a14 and 380 *ad* 426^b10 clarifies the meaning of the term κρίνειν in the *De anima* by referring to *An. Post.* II 19, 99^b35. On the other hand, Hamlyn (1976) 176 holds that this passage (99^b35) is concerned with 'discrimination' and not with 'judgement' (see part I ch. 9. n. 21). In this very context, moreover, Aristotle *does* use the term ἐμποιεῖν: καὶ γὰρ ἡ αἰσθησις οὕτω τὸ καθόλου ἐμποιεῖ (100^b4-5). Furthermore, it is not always possible to distinguish between πάσχειν τι ἐν τῷ αἰσθητηρίῳ and κρίνειν. See e.g. *De an.* II 11, 424^a4-6: ((...)) ὡς τῆς αἰσθησεως οἷον μεσότητός τινος οὔσης τῆς ἐν τοῖς αἰσθητοῖς ἐναντιώσεως. καὶ διὰ τοῦτο κρίνει τὰ αἰσθητά. τὸ γὰρ μέσον κριτικόν.; *De gen. an.* V 2, 781^b1-4: 'Ἡ μὲν οὖν περὶ τὰς διαφορὰς ἀκριβεία τῆς κρίσεως καὶ τῶν φῶς καὶ τῶν ὁσμῶν ἐν τῷ τὸ αἰσθητήριον καθαρὸν εἶναι καὶ τὸν ὑμένα τὸν ἐπιπολῆς ἐστίν. Likewise there are several places where the transla-

tion of κρίνειν as 'to judge' is not quite suitable; 'to distinguish', 'to discern' are more adequate translations. Thus Tricot (1977) in e.g. *De an.* II 10, 422^a21 and in III 2, 425^b21 translates 'discerner'; Ross (1961) 256 *ad* 422^a8 translates 'discern'; 272 *ad* 425^b12 'distinguish'; 281 *ad* 427^a17 'discern' (cf. 427^a20), etc. At the above-mentioned places Rodier translates 'discerner', 'saisir'. In general it is preferable to translate κρίνειν as 'to distinguish'. For this term is applicable to both the passive primary or actual sensation (here one 'discerns') and to the active association or dissociation by the senses-as-one. If one translates 'to judge', one can no longer do justice to Aristotle's understanding of primary sensation. For in that case it is no longer clear why this kind of sensation is always true according to Aristotle.

Hamlyn (1959) 12 wrongly sees πάσχειν and κρίνειν as concepts which can never apply to the same matter: 'if it is this ((a form of τὸ πάσχειν)) it cannot also be a form of τὸ κρίνειν (for the latter is active, i.e. a form of τὸ ποιεῖν, not passive)'. The term κρίνειν, however, merely serves to indicate roughly one of the topics with which the *De anima* is concerned, without at the same time playing a decisive part in the analysis as such.

Cf. finally Nussbaum 334, on *De motu an.* 700^b20-21 κριτικά γὰρ πάντα: 'Farquharson, Forster and Louis all translate this using 'judging' or 'judgement'. But κρίνειν and κριτικός need not have this implication. Toracca's 'facoltà discretiva' seems better. All these are faculties which are involved in discriminating or making distinctions. John Cooper has concluded from a careful survey of the uses of κρίνειν in connection with αἴσθησις in the *DA* that there is no need to interpret it as implying that any kind of explicit or reflective judgement is taking place ((...))'.

⁷ *De an.* II 5, 517^b2-5, cited at the beginning of n. 6. Rodier 257 *ad* 417^b3-5 writes: 'par δύναμις nous entendons ici l'*habitude*, c'est-à-dire la puissance déjà déterminée, comme la science qu'on possède sans en user actuellement. Or, dans le passage de cette habitude à l'acte, il ne saurait y avoir passion proprement dite, mais seulement développement et progrès. Il n'y a de passivité que lorsque la puissance indéterminée des contraires fait place à la puissance déterminée ou à l'*habitude*. Car il fait alors que la puissance de l'un des contraires soit détruite, et que l'*aptitude* ambiguë soit remplacée par la disposition permanente à agir dans un certain sens.'

What Rodier writes is correct; and Aristotle in fact regards sensation as the transition from the disposition of sensation to actual sensation. But Rodier 258 *ad* 417^b12 is also aware that Aristotle nevertheless regards this transition as πάσχειν, though of a different kind (417^b2; ^b13-15). In the passage just cited, however, Rodier is completely guided by Aristotle's model of the transition from ἐπιστήμη to θεωρεῖν. For the possessor of science achieves this transition independently and merely uses the disposition as a starting-point (417^b11: οὐ διδασκαλίαν; ^b24: διὸ νοῆσαι μὲν ἐπ' αὐτῷ, ὁπόταν βούληται), whereas whoever possesses the disposition of sensation must be brought to actual sensation by something else (417^b13: ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ διδασκαλικοῦ.; ^b20: τὰ ποιητικά τῆς ἐνεργείας ἔξωθεν.; ^b24-25: αἰσθάνεσθαι δ' οὐκ ἐπ' αὐτῷ). On this point, therefore, Aristotle distinguishes explicitly between the model, the transition from ἐπιστήμη to θεωρεῖν, and its object of application, the transition from τὸ καθ' ἑξὶν αἰσθάνεσθαι το τὸ κατ' ἐνέργειαν αἰσθάνεσθαι. That is why Rodier is wrong in saying (261 *ad* 417^b20): 'Les sensibles ne sont pas, à proprement parler, les agents de la sensation, puisque celle-ci n'est pas une passion, mais le passage à l'acte des facultés du sujet ((...))'. See 417^b3-5: τὸ δὲ σωτηρία μᾶλλον τοῦ δυνάμει ὄντος ὑπὸ τοῦ ἐντελεχείᾳ ὄντος.; this can hardly apply to the transition from ἐπιστήμη to θεωρεῖν. Aristotle must be thinking of the transition to actual sensation here. And directly linked to this passage are 417^a17-19: πάντα δὲ πάσχει καὶ κινεῖται ὑπὸ τοῦ ποιητικοῦ καὶ ἐνεργείᾳ ὄντος and 418^a3-4: τὸ δ' αἰσθητικὸν δυνάμει ἐστὶν οἷον τὸ αἰσθητὸν ἥδη ἐντελεχείᾳ.; cf. also e.g. II 7, 419^a17-18: πάσχοντος γάρ τι τοῦ αἰσθητικοῦ γίνεται τὸ ὁρᾶν.; II 10, 422^b2-3: πάσχει γάρ τι ἡ γεῦσις ὑπὸ τοῦ γευστοῦ, ἡ γευστόν.

In these passages Aristotle leaves no doubt about what 'les agents de la sensation' are; Rodier does not do justice to these passages. Nor does Hicks 357 *ad* ^b16, it would seem: 'upon contact with external subjects, the animal will exercise its powers of sensation, just as the one possessed of knowledge passes to the application and active exercise of his knowledge'. But cf. p. 358 *ad* ^b20: By τὰ ποιητικά τῆς ἐνεργείας are to be understood

the agents which educe and transform potential sense, the faculty, into actual sensation, ^{b22}. For, on the assumption that to perceive is to be passively affected and acted upon, there must be such an agent'. Cf. Cassirer 71; Seidl 98 n. 2. Quite wrong to me seems Seidl's remark: 'Von diesen konkret-aktuellen Sinnesqualitäten "erleiden" die Sinnesvermögen etwas, nicht aber von den sinnlichen Formen in ihnen selbst, die sich "nach dem Erleiden" erst aktualisieren'. Cf. opposite this view II 12, 424^a17-25; ^{a23}-24: πάσχει, ἀλλ' οὐχ ἑκάστον ἐκείνων λέγεται, ἀλλ' ἡ τοιονδί, καὶ κατὰ τὸν λόγον.; see also ^{b2}. Nowhere is an actualization by the faculty of sense mentioned. Thus there are no grounds for Seidl's interpretation of sense-cognition, nor for the parallel interpretation of intellectual cognition which he develops. Like Hamlyn (1959) Seidl is misled by the term κρίνειν: '((...)) ist das Sinnesvermögen beim "Erleiden" von seiten der wahrnehmbaren Dinge schon selbst in einer aktiven Funktion des "Unterscheidens" (κρίνειν, κριτικόν, cf. bes. B11, 424^a1-6 und Gamma 2, 426^b8-12) indem er die "Verhältnisse" der die Qualitäten konstituierenden Gegensätze in sich reaktualisiert' (p. 98). No such reactualization is apparent from the passages mentioned by Seidl.

⁸ Plants do not perceive; *De an.* II 12, 424^b1-3: αἶτιον γὰρ τὸ μὴ ἔχειν μεσότητα, μηδὲ τοιαύτην ἀρχὴν οἷαν τὰ εἶδη δέχεσθαι τῶν αἰσθητῶν, ἀλλὰ πάσχειν μετὰ τῆς ὕλης. Precisely this ability to πάσχειν ἀνεὺ τῆς ὕλης constitutes the ἀπάθεια of the sensory faculty. Cf. III 2, 426^a27-^{b7} and III 4, 429^a29-^{b5} and also *An. Post.* II 19, 100^a13-14: ἡ δὲ ψυχὴ ὑπάρχει τοιαύτη οὕσα οἷα δύνασθαι πάσχειν τοῦτο.

On the one hand, therefore, ἀπάθεια implies impassiveness to matter: the soul is not affected by the matter of the object of sensation. On the other hand the form of the object of sensation cannot affect the soul unless there is ἀπάθεια. Cf. a slightly curious formulation at Ross (1961) 265 *ad* ^b1-3: 'What they ((plants)) cannot *do* is *to be affected* by the form alone, in other words, to perceive' (my italics).

⁹ *De an.* II 12, 424^a17-19: ὅτι ἡ αἰσθησις ἐστὶ τὸ δεκτικὸν τῶν αἰσθητῶν εἰδῶν ἀνεὺ τῆς ὕλης.

¹⁰ *De an.* III 2, 426^a30; III 4, 429^a31-^{b1}.

¹¹ *De an.* II 7, 418^a29. On II 7, cf. the comments by Rodier 281 *ad* 418^a26-419^a25.

¹² *De an.* II 7, 418^a31-^{b3}.

¹³ *De an.* II 7, 418^b9-10: φῶς δὲ ἐστὶν ἡ τούτου ἐνέργεια, τοῦ διαφανοῦς ἡ διαφανές.

¹⁴ *De sensu* 3, 439^a18-19.

¹⁵ *De an.* II 7, 419^a9-11: τοῦτο γὰρ ἦν αὐτῷ τὸ χρώματι εἶναι, τὸ κινητικῷ εἶναι τοῦ κατ' ἐνέργειαν διαφανοῦς.; cf. 418^a31-^{b3}.

¹⁶ On the transparent as that which is common to the object of sensation, the medium, and the eye, see *De an.* II 7, 419^a11-17 (cf. II 8, 420^a3-5); *De sensu* 2, 438^b3-11; cf. 3, 439^b10-16.

¹⁷ Cf. *De sensu* 6, 446^b7: ὡς γιγνομένης τῆς φορᾶς ἐν τῷ μεταξύ.; 2, 438 ^b3-5.

¹⁸ *De an.* II 12, 424^a17-25; III 2, 425^b23-24: τὸ γὰρ αἰσθητήριον δεκτικὸν τοῦ αἰσθητοῦ ἀνεὺ τῆς ὕλης ἑκάστον.

¹⁹ *De an.* II 12, 424^a26-28: οὐ μὴν τὸ γε αἰσθητικῷ εἶναι οὐδ' ἡ αἰσθησις μέγεθός ἐστιν, ἀλλὰ λόγος τις καὶ δυνάμεις ἐκείνου.

²⁰ *De sensu* 4, 441^a29: τὸ δὲ θερμὸν συναίτιον. For the concept of συναίτιον, cf. *De an.* II 4, 416^a9-18. Rodier 236 *ad* 416^a14 notes: 'Ce terme désigne ((...)) ce qui, tout en étant nécessaire à la réalisation d'une chose, n'en est pas la cause proprement dite'.

²¹ *De an.* II 7, 418^b11-13: ὅταν ἡ ἐντελεχεία διαφανὲς ὑπὸ πυρὸς ἡ τοιούτου οἶον τὸ ἄνω σῶμα. Rodier 273 *ad* 418^b12: 'Il semble donc y avoir quelque indécision dans les idées d'Aristote sur ce point'.

²² *De sensu* 3, 439^a19-20.

²³ *De sensu* 4, 441^a9-10; ^a12-13.

²⁴ *De an.* II 7, 418^b16-17: πυρὸς ἡ τοιούτου τινὸς παρουσία ἐν τῷ διαφανεῖ. Elsewhere, in *De sensu* 5, 443^a11-12, Aristotle says: a thing has no taste, ἂν μὴ τι μιγνύμενον ποιῇ and (^b15-16): τὸ γὰρ θερμὸν τὸ κινεῖν καὶ δημιουργοῦν ἀφανίζουσιν ἡ φύξις καὶ ἡ πῆξις (cf. 4, 441^b17-19). Cf. Rodier 274 *ad* 418^b16; Hicks 369 *ad* 418^b16 writes: 'The fire, which is the source of light, is not immanent in the transparent. It is not the illuminating fire but the transmitted influence of the fire which actualizes the medium and converts it from

darkness to light'. He refers to Themistius: 'Them. explains "presence" as a mere relation: (60, 22 Heinze): σχέσις τοῦ παρόντος πρὸς ἐκεῖνο ᾧ πάρεστι.'

²⁵ *De an.* II 7, 418^b17: οὔτε γὰρ δύο σώματα ἅμα δυνατόν ἐν τῷ αὐτῷ εἶναι. Rodier writes 275 *ad* 418^b17: 'le feu opère dans le diaphane (παρουσία), sans se mêler à lui comme un corps à un autre'.

Chapter 3: Psychology of the imagination

¹ *De an.* III 3, 428^b13-14: ἔστι δὲ γίνεσθαι κίνησιν ὑπὸ τῆς ἐνεργείας τῆς αἰσθήσεως.; cf. 429^a1-2 and *De insomniis* 1, 459^a17-18.

² *De an.* III 3, 428^b25-30.

³ On the memory, see *De mem.* 1, 450^a10-14. On dreaming, see *De insomniis* 1, 459^a15-22; ^a21-22: φανερόν ὅτι τοῦ αἰσθητικοῦ μὲν ἐστὶ τὸ ἐνυπνιάζειν, τούτου δ' ἡ φανταστικόν.

⁴ *De somno* 2, 455^a20-22: ἔστι μὲν γὰρ μία αἴσθησις, καὶ τὸ κύριον αἰσθητήριον ἓν, τὸ δ' εἶναι αἰσθήσει τοῦ γένους ἐκάστου ἕτερον.; cf. *De an.* III 2, 426^b8-427^a16. On sensation-as-one, see esp. Kahn (1979).

⁵ *De mem.* 1, 450^a10-11: καὶ τὸ φάντασμα τῆς κοινῆς αἰσθήσεως πάθος ἐστίν. *De insomniis* 1, 459^a15-17: τὸ αὐτὸ τῷ αἰσθητικῷ τὸ φανταστικόν, τὸ δ' εἶναι φανταστικῷ καὶ αἰσθητικῷ ἕτερον. In the passage first cited the κοινή αἴσθησις is the same as the αἴσθησις ἡ μία ἢ κύριον αἰσθητήριον of *De somno* 2, 455^a20-22.

⁶ *De insomniis* 2, 460^b2-3: ἀπελθόντος τοῦ θύραθεν αἰσθητοῦ ἐμμένει τὰ αἰσθήματα αἰσθητὰ ὄντα.; cf. *De mem.* 1, 451^a8-12.

⁷ *De insomniis* 2, 460^b16-18.

⁸ *De somno* 2, 455^a12-^b2; ^a33-34: τοῦ γὰρ κυρίου τῶν ἄλλων πάντων αἰσθητηρίου καὶ πρὸς ὃ συντείνει τὰλλα.

⁹ See part II ch. 2 n. 10. The role of the imagination is to carry out a second movement with regard to these objects of sensation, regardless of whether they are present or absent. Cf. *De an.* III 3, 428^b28-30 and also ^b10-14.

The imagination can err even when the object of sensation is present and is being perceived, for the imagination is a second movement (see 428^b13-14 and ^b25-26) with regard to this datum and is therefore only indirectly related to the object of sensation. Cf. Rodier 428 *ad* 428^b11: 'l'imagination n'est pas la trace que la sensation a laissée, mais l'acte de la faculté imaginative'. Only when sensation takes place of the particular object of sensation and when this object is also present in the imagination will there be no error (428^b27-28). To that extent imagination seems to be entirely identical with sensation-as-one. Cf. Rodier 433 *ad* 428^b27: 'L'imagination se produit dès que la sensation a lieu ((...)), puisqu'elle en résulte immédiatement'; and p. 27 *ad* 403^a8: 'φαντασία s'applique aussi bien à la *présentation* qu' à la *représentation*'. See also Schofield (1968); he draws special attention to the first application mentioned by Rodier; and Hamlyn (1968) 134 *ad* 428^b10: 'it is meant to cover appearances in any sense of the word, i.e. both perceptual appearances and images'.

¹⁰ *De an.* III 2, 425^b12-13: 'Ἐπεὶ δ' αἰσθανόμεθα ὅτι ὁρῶμεν καὶ ἀκούομεν, ἀνάγκη ἡ τῇ ὁψεί αἰσθάνεσθαι ὅτι ὁρᾷ ἑτέρᾳ.

¹¹ *De an.* III 2, 425^b17-20; ^b19-20: καὶ χρῶμα ἔξει τὸ ὁρᾶν πρῶτον.

¹² *De an.* II 12, 424^b17-19 (cited in ch. 2 n. 6); cf. III 2, 425^b22-25.

¹³ Cf. Hicks 433 *ad* 425^b12-25; he speaks of a 'question raised but not properly answered in the present chapter'; that is also the view of Kahn (1979) 11.

¹⁴ *De an.* III 4, 430^a2-5. Kahn (1979) 28-30 ignores this passage. See ch. 6.

¹⁵ This also appears from *De somno* 455^a12-^b2; ^a34: πρὸς ὃ συντείνει τὰλλα. The direction of movement is towards the soul. Cf. Kahn (1979) 25: 'a subjective, but not necessarily reflective awareness'; and 'neither more nor less than the normal consciousness of waking life'.

¹⁶ Cf. *De sensu* 6, 445^b3-446^a20; 7, 448^a19-^b17.

¹⁷ *De sensu* 6, 446^a14-15; 446^b6-9; 7, 448^a19-22.

¹⁸ *De somno* 2, 455^a15-17: ἔστι δέ τις καὶ κοινὴ δύναμις ἀκολουθοῦσα πάσαις, ἥ καὶ ὅτι ὁρᾷ καὶ ἀκούει αἰσθάνεται.

Rodier 365 *ad* 425^b15-17: 'Ce n'est pas à la vue en tant que sens particulier, mais à la vue en tant que qu'elle a pour condition et pour élément le sens commun, qu'Aristote attribue la conscience de la vision'; cf. Kahn (1979) 11. Kahn shows that many difficulties in the interpretation are caused by the fact that Aristotle ultimately considers sense to be a differentiated unity, whereas in the *De anima* and the *Parva Naturalia* he starts off by discussing its separate parts and only gradually emphasizes their unity. Cf. Hamlyn (1968) B 201-203; p. 203: 'According to the *De somno*, it is because the senses form a unity and are forms of a general faculty of sense-perception that we are aware that we perceive when we do'; and: 'It is indeed by sight that we perceive that we see, according to both works, but not just that. The only thing is that the *De anima* leaves it at that; the *De somno* goes further'.

Rodier 365 *ad* 425^b15-17 characterizes κοινὴ αἰσθησις as follows: 'le sens commun ((...)) n'est pas un sens particulier; c'est la partie commune que renferme chaque sens à côté de sa partie propre; c'est la sensibilité primitive non encore différenciée'.

¹⁹ *De an.* III 1, 425^a30-b4.

²⁰ Cf. the use of terms in *De mem.* 1, 450^b20-451^a2.

²¹ *De an.* III 3, 427^b17-21; cf. *De mem.* 1, 450^b20-451^a2.

²² Cf. Nussbaum 258-259; 258: 'I think it can be argued that it is because of the prevalence of the passive picture (necessary, in his view, to explain perceptual accuracy), and because of his belief that the proper objects of the senses are not things but their qualities, that Aristotle is forced to turn to *phantasia* in a number of passages to explain the agent's selective interpreting of his environment'; 259: 'we are always passively receiving perceptual stimuli; but when we actively focus on some object in our environment, separating it out from its context and seeing it as a certain thing, the faculty of *phantasia*, or the *phantasia*-aspect of *aesthesis*, is called into play'.

On the other hand it is possible to speak of truth and error in relation to φαντασία only inasmuch as it is not an *arbitrary* imagination. This is not Aristotle's point of view from the outset in *De an.* III 3; see the texts mentioned in n. 21.

Chapter 4: *De anima* I and II on the mind

¹ See part III ch. 1 n. 2.

² *De an.* I 1, 403^a5-8: μάλιστα δ' ὅμοιον ἰδίῳ τὸ νοεῖν.

³ *De an.* I 1, 403^a8-10: εἰ δ' ἐστὶ καὶ τοῦτο φαντασία τις ἥ μὴ ἄνευ φαντασίας, οὐκ ἐνδέχεται ἂν οὐδὲ τοῦτ' ἄνευ σώματος εἶναι.

Rodier 27-30 *ad* 403^a8-9 shows in connection with this passage the problems caused by the interpretation of Aristotle's statements on the mind in general. In the following chapters I shall discuss Rodier's views in more detail.

⁴ See ch. 3 n. 5.

⁵ *De an.* I 1, 403^a27-28. Cf. *De part. an.* I 1, 641^a21-24: τοῦ φυσικοῦ περὶ ψυχῆς ἂν εἴη λέγειν καὶ εἰδέναι, καὶ εἰ μὴ πάσης, κατ' αὐτὸ τοῦτο καθ' ὃ τοιοῦτο τὸ ζῶον, καὶ τί ἐστὶν ἡ ψυχὴ ἢ αὐτὸ τοῦτο τὸ μόριον.; ^a33-36: 'Ἀπορήσειε δ' ἂν τις εἰς τὸ νῦν λεχθὲν ἐπιβλέψας, πότερον περὶ πάσης ψυχῆς τῆς φυσικῆς ἐστὶ τὸ εἰπεῖν ἢ περὶ τινος. εἰ γὰρ περὶ πάσης, οὐδεμία λείπεται παρὰ τὴν φυσικὴν ἐπιστήμην φιλοσοφία.

Cf. *Met.* Epsilon 1, 1026^a4-6: πῶς δεῖ ἐν τοῖς φυσικοῖς τὸ τί ἐστὶ ζητεῖν καὶ ὀρίζεσθαι, καὶ διότι καὶ περὶ ψυχῆς ἐνίας θεωρῆσαι τοῦ φυσικοῦ, ὅση μὴ ἄνευ τῆς ὕλης ἐστίν.

(Aristotelian physics has as its object everything that is somehow joined to matter. It includes therefore biology and psychology, the latter insofar as it is concerned with a kind of soul — the principle of life — which cannot exist independently of matter. Mathematics also studies the physical world, but does so after having abstracted from its matter. First Philosophy or theology studies the immaterial. See *Met.* Epsilon 1, 1025^b18-1026^a32). See further n. 12.

⁶ *De an.* I 1, 403^b14-16.

⁷ *De an.* I 1, 402^b3-5: νυν μὲν γὰρ οἱ λέγοντες καὶ ζητοῦντες περὶ ψυχῆς περὶ τῆς ἀνθρωπίνης μόνης εἰκόσιν ἐπισκοπεῖν.

Commentators generally hold that Aristotle's objection is directed against those who neglect to discuss the souls of animals and plants; see e.g. Rodier, Hicks, and Theiler *ad loc.* Rodier 14 *ad* 402^b3 shows that the criticism cannot be directed at Plato, nor, it seems, at the older natural philosophers: 'les expressions νυν μὲν γὰρ ne semblent guère se prêter à cette hypothèse'.

Another possibility is that Aristotle is referring to those who do not talk about νοῦς and only seem to recognize a material soul related to magnitude. In *De an.* I he contrasts Plato and Anaxagoras on this very point; see e.g. I 2, 404^b16-17: τὸν αὐτὸν δὲ τρόπον καὶ Πλάτων ἐν τῷ Τιμαίῳ τὴν ψυχὴν ἐκ τῶν στοιχείων ποιεῖ.; cf. I 3, 407^a2-3. In accordance with this interpretation is the fact that Aristotle also uses the term ἀνθρώπινος elsewhere to indicate the *merely*-human in contrast to the divine-in-man. See *E.N.* X 7, 1177^b26-34: ὁ δὲ τοιοῦτος ἂν εἴη βίος κρείττων ἢ κατ' ἀνθρώπον. οὐ γὰρ ἡ ἀνθρωπὸς ἐστὶν οὕτω βιώσεται, ἀλλ' ἢ θεῖον τι ἐν αὐτῷ ὑπάρχει. ὅσον δὲ διαφέρει τοῦτο τοῦ συνθέτου, τοσοῦτον καὶ ἡ ἐνέργεια τῆς κατὰ τὴν ἄλλην ἀρετῆς. εἰ δὲ θεῖον ὁ νοῦς πρὸς τὸν ἄνθρωπον, καὶ ὁ κατὰ τοῦτον βίος θεῖος πρὸς τὸν ἀνθρώπινον βίος. οὐ χρὴ δὲ κατὰ τοὺς παραινούντας ἀνθρώπινα φρονεῖν ἀνθρώπων ὄντα οὐδὲ θνητὰ τὸν θνητόν, ἀλλ' ἐφ' ὅσον ἐνδέχεται ἀθανατίζειν καὶ πάντα ποιεῖν πρὸς τὸ ζῆν κατὰ τὸ κράτιστον τῶν ἐν αὐτῷ.; cf. V 13, 1137^a30; VI 7, 1141^b8; X 8, 1178^b23; *Meteorologica* II 1, 353^b6.

⁸ *De an.* I 1, 402^b1-3. Hicks 184 *ad* 402^b2 remarks: 'If however the soul in some cases is immortal, in others mortal, these souls could hardly belong to the same genus', and he refers to *De an.* II 2, 413^b26; cf. III 5, 430^a23-25.

⁹ *De an.* I 1, 402^b5-7.

¹⁰ *De an.* I 2, 404^a27-31; cf. 405^a8-9.

¹¹ *De an.* I 2, 404^a25-27; cf. 405^a8-9.

¹² *De an.* I 2, 404^b5-6. In *De part. an.* I 1 Aristotle likewise comes to the conclusion that the mind is a kind of soul which is not the physicist's object of study. See 641^a34-^b10: εἰ γὰρ περὶ πάσης, οὐδεμία λείπεται παρὰ τὴν φυσικὴν ἐπιστήμην φιλοσοφία. 'Ὁ γὰρ νοῦς τῶν νοητῶν. Ὡστε περὶ πάντων ἡ φυσικὴ γνῶσις ἂν εἴη. τῆς γὰρ αὐτῆς περὶ νοῦ καὶ τοῦ νοητοῦ θεωρησάμενοι, εἴπερ πρὸς ἄλλα, καὶ ἡ αὐτὴ θεωρία τῶν πρὸς ἄλλα πάντων, καθάπερ καὶ περὶ αἰσθήσεως καὶ τῶν αἰσθητῶν, ἡ οὐκ ἐστὶ πᾶσα ἡ ψυχὴ κινήσεως ἀρχή, οὐδὲ τὰ μόρια ἅπαντα, ἀλλ' αὐξήσεως μὲν ὅπερ καὶ ἐν τοῖς φυτοῖς, ἀλλοιώσεως δὲ τὸ αἰσθητικόν, φορᾶς δ' ἑτερόν τι καὶ οὐ τὸ νοητικόν. ὑπάρχει γὰρ ἡ φορὰ καὶ ἐν ἑτέροις τῶν ζώων, διάνοια δ' οὐδενί. Δῆλον οὖν ὡς οὐ περὶ πάσης ψυχῆς λεκτέον. οὐδὲ γὰρ πᾶσα ψυχὴ φύσις, ἀλλὰ τι μόνον αὐτῆς ἐν ἡ καὶ πλείω. Hicks 200 *ad* 403^a28 writes: 'the treatment of νοῦς in ((*De an.*)) III, cc. 4-8 belongs rather to First Philosophy than to physics, if we accept the conclusion of *De Part. An.* 641^b8'.

¹³ *De an.* I 2, 405^a16-17: μόνον γοῦν φησὶν αὐτὸν τῶν ὄντων ἀπλοῦν εἶναι καὶ ἀμιγῆ τε καὶ καθαρόν.

¹⁴ *De an.* I 2, 405^b19-21: 'Ἀναξαγόρας δὲ μόνος ἀπαθῆ φησὶν εἶναι τὸν νοῦν, καὶ κοινὸν οὐθὲν οὐθενί τῶν ἄλλων ἔχειν.

¹⁵ *De gen. et corr.* I 7, 324^a26-^b13.

¹⁶ Cf. the remark which Aristotle makes in reference to Democritus: *De an.* I 2, 404^a30-31: οὐ δὲ χρῆται τῷ νῷ ὡς δυνάμει τινὶ περὶ τὴν ἀλήθειαν.

¹⁷ *De an.* I 2, 405^b21-23.

¹⁸ *De an.* I 3, 407^a3-5.

¹⁹ *De an.* I 3, 407^a2-3.

²⁰ *De an.* I 3, 407^a6-^b13.

²¹ Cf. *De an.* I 3, 407^a15-26.

²² *De an.* I 3, 407^a22-23: αἰεὶ δὲ δὴ τί νοήσῃ (δεῖ γὰρ, εἴπερ αἰδῖος ἡ περιφορά).; ^a32-33: ἔτι δ' ἡ νόσις ἔοικεν ἡρεμῇσι τινὶ καὶ ἐπιστάσει μᾶλλον ἢ κινήσει.

Rodier 113 mentions various possible interpretations of ^a32-33. My interpretation corresponds to the one which Rodier mentions last. He rightly refers here to *An. Post.* II 19, 100^a6 sqq.

²³ *De an.* I 3, 407^b12-13. Cf. Ross (1961) 192 and Theiler (1959) 98 *ad loc.* Rodier 116 *ad loc.* puts forward another interpretation.

²⁴ *De an.* I 4, 408^b11-29.

²⁵ *De an.* I 4, 408^b13-15.

²⁶ *De an.* I 4, 408^b18-19: ὁ δὲ νοῦς ἔοικεν ἐγγίνεσθαι οὐσία τις οὐσα, καὶ οὐ φθείρεσθαι.

Ross (1961) 198 *ad* 408^b18 writes in connection with the above passage: 'This does not involve the doctrine of ὁ θύραθεν νοῦς (*De gen. an.* 736^b28)'. Others, e.g. Trendelenburg 233, Rodier 136, Hicks 276, Seidl 127, and Tricot (1977) 45 n. 5, do mention the possibility that the views in *De gen. an.* are at the back of this passage; but that is as far as they go. On *De gen. an.* II 3, see ch. 8.

Ross's view that 'A. does not here say that reason is preexistent' is not incorrect. Aristotle does not in fact say this. On the other hand it is out of the question that the νοῦς, an immaterial οὐσία, though imperishable, should yet gain its first existence in man. Not only *can* such an οὐσία exist independently and separately before uniting with a being composed of body and soul (see *De gen. an.* II 3), but this οὐσία *must* also exist beforehand, for its ἐνέργεια is not σωματική (cf. *De gen. an.* II 3, 736^b22-29 and *De an.* II 1, 413^a3-7) and in no way therefore does it depend for its existence on the generation of a corporeal being. This is the purport of οὐσία τις οὐσα in 408^b19.

²⁷ Cf. *De an.* I 5, 410^b14: προγενέστατον. Rodier 153 *ad loc.* likewise links up this term with I 4, 408^b18-29.

²⁸ *De an.* I 4, 408^b24-25: καὶ τὸ νοεῖν δὴ καὶ τὸ θεωρεῖν μαραίνεται ἄλλου τινὸς ἔσω φθειρομένου, αὐτὸ δὲ ἀπαθές ἐστιν.

²⁹ *De an.* I 4, 408^b25-27: τὸ δὲ διανοεῖσθαι καὶ φιλεῖν ἢ μισεῖν οὐκ ἔστιν ἐκείνου πάθη, ἀλλὰ τοῦδι τοῦ ἔχοντος ἐκείνο, ἢ ἐκείνο ἔχει.

ἐκείνου refers back to νοῦς, and not to ψυχή as Hicks 278 *ad* b26 maintains. What follows is otherwise unclear, for in b28-29 ἐκείνου stands opposite to τοῦ κοινοῦ, and thus to the whole of body and soul. In his translation Hicks keeps to the traditional view.

Hicks 276 *ad* 408^b18-19 draws attention to the fact that Aristotle distinguishes here between τὸ διανοεῖσθαι (b25-26) and τὸ νοεῖν (b24) and writes: 'which appears to me quite arbitrary, since either verb may stand for the act of thinking in the individual'. And Ross (1961) 199 *ad* b25-27 writes: 'It is curious that A. here groups τὸ διανοεῖσθαι, discursive thought, not with τὸ νοεῖν, intuitive thought, but with loving and hating, and describes it as belonging not to νοῦς, but to that which has νοῦς, i.e. the rational animal'. Cf. Nuyens 271. The explanation lies in the fact that Aristotle regards νοῦς here primarily as οὐσία τις (408^b19), so that *to that extent* τὸ νοεῖν takes place quite independently of any corporeal ἐνέργεια, whereas τὸ διανοεῖσθαι does not belong to νοῦς as such and must take place by means of sense-images. Only man does not have νοεῖν without at the same time having φαντάσματα. That is why man is no longer capable of νοεῖν when the sensory faculty has perished with the body (408^b24-25: ἄλλου τινὸς ἔσω φθειρομένου). Cf. Rodier 137 *ad* 405^b25: 'le premier aissthérion siège des φαντάσματα qui sont nécessaire pour penser'. That which perishes is different from νοῦς and is accidental to it: αὐτὸ δὲ ἀπαθές ἐστιν (408^b25).

³⁰ *De an.* I 4, 408^b27-28: διὸ καὶ τούτου φθειρομένου οὔτε μνημονεύει οὔτε φιλεῖ.

³¹ *De an.* I 4, 408^b29: ὁ δὲ νοῦς ἴσως θεϊότερόν τι καὶ ἀπαθές ἐστιν. Hicks 279 sees a similarity between this passage and *De gen. an.* II 3, 736^b27; 737^a9; II 6, 744^b21; *Met.* Lambda 9, 1074^b16 and *E.N.* X 7, 1177^a16, ³⁰. In reference to 1170^b30: θεῶν ὁ νοῦς πρὸς τὸν ἄνθρωπον, he writes: 'the comparison is, as here ((408^b29)), between the individual and νοῦς in him'. This creates a problem, according to Hicks (p. 296 *ad* 408^b18-29): 'the anomalous position of νοῦς as οὐσία τις ἐγγινομένη, when the composite substance of the animal already has a form, viz. its soul, 407^b23 sq.'. Moreover, as we have seen, the οὐσία itself is already substance here. The problem would be solved, however, if by πρὸς (1177^b30) Aristotle also indicates a relation of influencing, participating, or mixing, so that νοῦς is in man only to some extent according to its effect, and not as such (cf. again 408^b27: ἢ ἐκείνο ἔχει, together with II 4, 425^a26-^b7 and *De gen. an.* II 6, 744^b21-22: καθάπερ οὖν εἰς τὴν αὐξήσιν ὁ θύραθεν ταῦτα ποιεῖ νοῦς. The last sentence is difficult to inter-

pret; see in any case, opposite the interpretation given by Moreaux (1955), Louis (1961) 83 n. 1. See also ch. 8 on this subject).

³² Cf. *De an.* I 4, 408^b27: ἡ ἐκεῖνο ἔχει. Man has intellect only to some extent and does not incorporate intellect simply. Rather he seems to have mind inasmuch as he is under the influence of an independently existing and imperishable mind. For the phrase cited implies the existence of a mind which one partly possesses and which one partly does not possess, a mind, therefore, which has a different, complete, and pure existence besides its (partial) existence in man. This implication of ἡ ἐκεῖνο ἔχει is not brought out by the various commentators.

³³ *De an.* I 5, 411^a26-^b5.

³⁴ *De an.* I 5, 411^b5-17.

³⁵ *De an.* I 5, 411^b18-19: ποῖον γὰρ μόριον ἢ πῶς ὁ νοῦς συνέξει, χαλεπὸν καὶ πλάσαι. However, cf. 410^b24-27; ^b25: καὶ θεῖη τὸν νοῦν μέρος τι τῆς ψυχῆς. But νοῦς in the eminent sense is not concerned here; cf. 410^b24: διάνοιαν ἔχειν.

³⁶ *De an.* II 1, 413^a3-7: ὅτι μὲν οὖν οὐκ ἔστιν ἡ ψυχὴ χωριστὴ τοῦ σώματος, ἢ μέρη τινὰ αὐτῆς, εἰ μεριστὴ πέφυκεν, οὐκ ἄδηλον. ἐνίων γὰρ ἡ ἐντελέχεια τῶν μερῶν ἐστὶν αὐτῶν. οὐ μὴν ἀλλ' ἐνία γέ οὐθὲν κωλύει, διὰ τὸ μηθενὸς εἶναι σώματος ἐντελεχείας.

Trendelenburg 273 *ad* 413^a14 notes: 'Iam praeparat νοῦν χωριστόν. cf. I, 4. 408^b24; II, 2. 413^b24'. Cf. Ross (1961) 214 *ad* 403^a5-7.

³⁷ *De an.* II 2, 413^b24-27: περὶ δὲ τοῦ νοῦ καὶ τῆς θεωρητικῆς δυνάμεως οὐδὲν πω φανερόν, ἀλλ' ἔοικε ψυχῆς γένος ἕτερον εἶναι, καὶ τοῦτο μόνον ἐνδέχεται χωρίζεσθαι, καθάπερ τὸ αἶθρον τοῦ φθαρτοῦ.

Rodier 202 *ad* 413^b25-26 thinks that Aristotle is still highly uncertain about the mind here. But οὐδὲν πω φανερόν seems to refer to the progress of the exposition (it does not arrive at the subject of νοῦς till III 4), while ἔοικε need not be taken in a dubitative sense. According to Rodier this view is also found in Simplicius and Philoponus, but not in Alexander. Rodier exaggerates both here and in his exposition on pp. 27-30 the extent to which Aristotle's views on the mind are unclear.

³⁸ Participation is mentioned in *De an.* I 4, 408^b27: ἡ ἐκεῖνο ἔχει; and also, on a lower level, in II 4, 415^a26-^b7.

³⁹ See *De an.* II 2, 413^b26: ψυχῆς γένος ἕτερον. Cf. I 4, 408^b17-29 and *De gen. an.* II 3. See also Hicks LX: 'its decay in the individual is an accident and not its real essence'.

Chapter 5: The psychology of intellective cognition in *De anima* III 4

¹ *De an.* II 4, 429^a13-14: εἰ δὴ ἐστὶ τὸ νοεῖν ὥσπερ τὸ αἰσθάνεσθαι. Ross (1961) 40 writes in connection with this passage: 'If it were like sense-perception, it would be an affection produced by the object of knowledge, but he at once rejects this suggestion: soul, he says, must be impassive, receptive of the form but different from it'. In my opinion, however, it is not right to read εἰ δὴ ἐστὶ as an *irrealis*. Moreover, Ross disregards here the meaning of ἄρα (429^a15): the ἀπάθεια of the mind follows from what has gone before. Cf., opposite Ross, Trendelenburg 383 *ad* 429^a15: 'ex antecedentibus collecta'; see also ch. 2 n. 8.

Hamlyn's translation (1968) 57 of 429^a13 sqq. is already misleading. Lowe's article (1983) on III 4 lacks caution and its conclusions are almost wholly untenable.

² *De an.* I 5, 410^a25-26: τὸ δ' αἰσθάνεσθαι πάσχειν τι καὶ κινεῖσθαι τιθέασιν. ὁμοίως δὲ καὶ τὸ νοεῖν τε καὶ γινώσκειν. Aristotle concurs with this view, it seems.

³ *De an.* III 4, 429^a14-15: ἡ πάσχειν τι ἂν εἴη ὑπὸ τοῦ νοητοῦ ἢ τι τοιοῦτον ἕτερον.; cf. 429^b24-25: εἰ τὸ νοεῖν πάσχειν τί ἐστίν.

Hicks 475 *ad* ^a14 does not understand the parallel rightly. See on the other hand Trendelenburg 382 *ad* 429^a13, Theiler 139 *ad* ^a13, and, very clearly, Cassirer 151-152; cf. also Themistius 94, 5-9. Guthrie 311 wrongly supposes that ἢ τι τοιοῦτον ἕτερον instead plays down the parallel with sensation; see also n. 5.

⁴ Cf. *Met.* Lambda 7, 1072^a30: νοῦς δὲ ὑπὸ τοῦ νοητοῦ κινεῖται. See also ch. 2 n. 6.

⁵ *De an.* III 4, 429^a15-16: ἀπαθές ἄρα δεῖ εἶναι, δεκτικὸν δὲ τοῦ εἶδους καὶ δυνάμει τοιοῦτον ἀλλὰ μὴ τοῦτο.; cf. *An. Post.* II 19, 99^b32-34: ἀνάγκη ἄρα ἔχειν μὲν τινα δύνανται, μὴ τοιαύτην δ' ἔχειν ἢ ἔσται τούτων τιμιωτέρα κατ' ἀκριβειαν.

The ἀπάθεια of the mind coincides with πάσχειν (which also characterizes intuition) and shows what is meant by the qualification ἢ τι τοιοῦτον ἕτερον (^a14-15). The term ἀπάθεια is explained by what follows directly: δεκτικὸν δὲ τοῦ εἶδους.; form is undergone, not matter; there is impassiveness to matter (cf. ch. 2 n. 8). There is question of a τελειωτικὸν πάθος καὶ οὐ φθαρτικὸν (Philoponus 522, 14). Therefore ἢ τι τοιοῦτον ἕτερον could also have been said in reference to the πάσχειν characteristic of sensation; cf. II 5, 417^b2-19; ^b2: οὐκ ἔστι ἀπλοῦν οὐδὲ τὸ πάσχειν,—this is applied to sensation in ^b16-19.

Rodier 436 *ad* 429^a15 ἀπαθές ἄρα δεῖ εἶναι goes too far in saying that 'πάσχειν, dans la phrase précédente, a donc, en réalité, le sens de ποιεῖν (agir en présence de l'intelligible; le saisir)'. Seidl 101 n. 5 agrees with Rodier; cf. also Barbotin 125 and 159. But surely in πάσχειν ὑπὸ τοῦ νοητοῦ one cannot read ποιεῖν ὑπὸ τοῦ νοῦ. Moreover, it is at odds with what Aristotle says about πάσχειν in connection with sense: τὸ αἰσθητὸν ἐστὶ ποιητικόν, whereas τὸ αἰσθητικόν is of itself merely δυνάμει and παθητικόν (see *De an.* II 5). See further Hicks LXII and 476 *ad* ^a15; Theiler 139 *ad* ^a15.

⁶ *De an.* III 4, 429^a18: ἀνάγκη ἄρα, ἐπεὶ πάντα νοεῖ, ἀμύγη εἶναι.

According to Hicks 477 *ad* ^a18, Aristotle means 'immixed with objects of cognition', i.e. εἶδη νοητά'. Nothing like that is intended in Anaxagoras, however, from whom Aristotle derives this qualification of the mind (see ^a19). Cf. Kirk and Raven 374: 'Anaxagoras in fact is striving ((...)) to imagine and describe a truly incorporeal entity'. Hicks's argument that 'it seems more reasonable that A. should first call attention to the attributes in which sense and intellect agree before passing to their dissimilarity', is invalidated by the foregoing ἐπεὶ πάντα νοεῖ (^a18). However, Hicks's interpretation is not wholly untenable; cf. Nuyens 284-285 and Guthrie 314.

⁷ *De an.* III 4, 429^a20-24; cf. ^b29-430^a2. ^b31-^a2: δυνάμει δ' οὕτως ὥσπερ ἐν γραμματείῳ ᾧ μὴ ἐν ὑσυχίᾳ ἐντελεχεῖα γεγραμμένον. ὅπερ συμβαίνει ἐπὶ τοῦ νοῦ. See Alexander's comments 84,24-85,1 on this passage.

⁸ *De an.* III 4, 429^a24-27: διὸ οὐδὲ μεμῆχθαι εὐλογον αὐτὸν τῷ σώματι. ποιός τις γὰρ ἂν γίγνοιτο, ἢ ψυχρὸς ἢ θερμὸς, ἢ καὶ ὀργανὸν τι εἴη, ὥσπερ τῷ αἰσθητικῷ. νῦν δ' οὐθὲν ἔστιν. Cf. I 3, 407^b2 sqq.

In this connection Nuyens 286 writes that the relation between νοῦς and ψυχή is still a problem for Aristotle in *De an.* III 4. For: 'Comme entéléchie du corps, la ψυχή lui est unie de la façon la plus intime; le νοῦς appartient à la ψυχή, il en est une partie (μέριον), et malgré cela il n'est pas "mêlé" avec le corps'. But in my view it is not yet clear whether νοῦς in the sense indicated by Nuyens is a part of the soul. In 429^a10-11 and ^a22-23 Aristotle may be more concerned to indicate that νοῦς is also a human cognitive faculty and is to that extent related to the human soul. The mind is τοῦ κοινοῦ (I 4, 408^b28-29) of the whole of body and soul and, as something imperishable, is distinct from this perishable compound (cf. 408^b25: ἄλλου τινός). Unlike Nuyens, I do not believe that Aristotle considered the relation between mind and soul to be a problem on the point which Nuyens indicates; see also ch. 9 §19.

⁹ *De an.* III 4, 429^a29-30: ὅτι δ' οὐχ ὁμοία ἡ ἀπάθεια τοῦ αἰσθητικοῦ καὶ τοῦ νοητικοῦ.

¹⁰ *De an.* III 4, 429^a31-^b4.

¹¹ See n. 8; *De an.* III 4, 429^a21-22: ὥστε μὴδ' αὐτοῦ εἶναι φύσιν μηδεμίαν ἀλλ' ἢ ταύτην, ὅτι δυνατός. See further n. 9 and the continuation of the text cited there; and III 4, 429^b4-5: τὸ μὲν γὰρ αἰσθητικὸν οὐκ ἄνευ σώματος, ὃ δὲ χωριστός.

¹² *De an.* III 4, 429^a22-24: ὃ ἄρα καλούμενος τῆς ψυχῆς νοῦς (λέγω δὲ νοῦν ᾧ διανοεῖται καὶ ὑπολαμβάνει ἡ ψυχή). Cf. *De gen. an.* II 3, 736^b14: περὶ τῆς νοητικῆς ((ψυχῆς)) λεκτέον. Aristotle's use of the term νοῦς is not simply current, as appears from the first-cited text. Cf. *De an.* I 3, 407^a4-5 and III 9, 432^b26, where the expression ὁ καλούμενος νοῦς recurs. Cf. Hicks 480 *ad* ^a22.

¹³ *De an.* III 4, 429^b5: ὃ δὲ ((νοῦς)) χωριστός. The term χωριστός here means 'existing separately from the body' as much as 'existing separately, independently'. Cf. II 2, 413^a31-32 and ^b26-28; II 3, 415^a2-3: τοῦ δ' αἰσθητικοῦ χωρίζεται τὸ θρεπτικὸν ἐν τοῖς φυτοῖς.

On χωριστός (b5), cf. Hicks 475 *ad* ^a11 and 483 *ad* b5. In this context Nuyens 289 writes: 'Il n'y a pas de doute qu'en attribuant au νοῦς le prédicat χωριστός, Aristote ne mette l'accent, même très fortement, sur l'indépendance du νοῦς par rapport au corps. On ne peut, cependant, interpréter ses paroles en un sens qui lui ferait affirmer à cet endroit la survie de la personne humaine ou même celle de la faculté intellectuelle de l'homme. Antérieurement déjà, il a déclaré que la pensée *prise en soi* est indépendante du corps; mais la pensée de tel homme en particulier dépend de l'existence de cet homme'. Nuyens is referring here to I 4, 408^b24-29, where Aristotle distinguishes between human διανοεῖσθαι and the νοεῖν carried out by the νοῦς as such; cf. Nuyens 270-272 and ch. 4 n. 29. According to Nuyens, then, the νοῦς of III 4 is a non-personal mind. On the basis of comparable arguments A. Mansion (1953) too concludes that there is no personal immortality in Aristotle.

None of this should allow us to forget that *De an.* III 4 is as yet only concerned with a mind of which the chief characteristic is potentiality. As mind, therefore, this part or function of the soul is not yet a positive actuality.

¹⁴ *De an.* III 4, 429^b5-9: ὅταν δ' οὕτως ἕκαστα γένηται ὡς ὁ ἐπιστήμων λέγεται ὁ κατ' ἐνέργειαν (τοῦτο δὲ συμβαίνει ὅταν δύνῃται ἐνεργεῖν δι' αὐτοῦ), ἔστι μὲν καὶ τότε δυνάμει πως, οὐ μὴν ὁμοίως καὶ πρὶν μαθεῖν ἢ εὐρεῖν.

On this passage, cf. Rodier's commentary 440-442. He writes: 'Entre la pure puissance, en effet, et l'acte proprement dit, se place l'habitude (état du savant qui ne prend pas sa science pour objet de sa contemplation actuelle), qu'on peut appeler soit le plus bas degré de l'acte, soit le plus haut degré de puissance'.

¹⁵ Cf. *Phys.* VIII 4, 255^a33 sqq.: *Met.* Theta 6, 1048^a32 sqq.; and also *An.Pr.* II 21, 67^a39-b5; *An. Post.* I 1, 71^a24-29 and *Met.* Mu 10, 1087^a15 sqq.

¹⁶ *De an.* II 5, 417^a21-b2.

¹⁷ *De an.* II 5, 417^a26-28: ἐκάτερος δὲ τούτων οὐ τὸν αὐτὸν τρόπον δυνατός ἐστιν, ἀλλ' ὁ μὲν ὅτι τὸ γένος τοιοῦτον καὶ ἡ ὕλη, ὁ δ' ὅτι βουλευθεὶς δυνατός θεωρεῖν, ἂν μὴ τι καλῶς τῶν ἐξωθεν.

¹⁸ *De an.* II 5, 417^a21.

¹⁹ cf. *De sensu* 4, 441^b22-23: οὐ γὰρ κατὰ τὸ μανθάνειν ἀλλὰ κατὰ τὸ θεωρεῖν ἐστὶ τὸ αἰσθάνεσθαι.

²⁰ *De an.* II 5, 417^b2-12. Cf. Rodier 257 *ad* 417^b3-5 and 258 *ad* 417^b9-11.

²¹ Cf. *De an.* II 1, 412^a10-11; ^a22-27.

²² *De an.* II 5, 417^b5-7: θεωροῦν γὰρ γίνεται τὸ ἔχον τὴν ἐπιστήμην, ὅπερ ἢ οὐκ ἔστιν ἀλλοιοῦσθαι (εἰς αὐτὸ γὰρ ἡ ἐπίδοσις καὶ εἰς ἐντελέχειαν) ((...)); cf. ^b13-16.

²³ *De an.* II 5, 417^b13: ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ διδασκαλικοῦ.

²⁴ *De an.* II 5, 417^b16-19: τοῦ δ' αἰσθητικοῦ ἢ μὲν πρώτη μεταβολὴ γίνεται ὑπὸ τοῦ γεννῶντος, ὅταν δὲ γεννηθῇ, ἔχει ἤδη, ὥσπερ ἐπιστήμην, καὶ τὸ αἰσθάνεσθαι. τὸ κατ' ἐνέργειαν δὲ ὁμοίως λέγεται τῷ θεωρεῖν.

²⁵ Cf. Plato *Theaet.* 197b-198d; *Euthyd.* 277b.

²⁶ *De an.* II 5, 417^b24-25: διὸ νοῆσαι μὲν ἐπ' αὐτῷ, ὁπόταν βούληται, αἰσθάνεσθαι δ' οὐκ ἐπ' αὐτῷ.

²⁷ *De an.* III 4, 429^b5-9, cited in n. 14. Cf. *Met.* Theta 6, 1048^a34-35: καὶ ἐπιστήμονα καὶ τὸν μὴ θεωροῦντα, ἂν δυνατός ᾖ θεωρεῖν.; *Phys.* VIII 4, 255^b1-5: Οἷον τὸ μανθάνον ἐκ δυνάμει ὄντος ἕτερον γίνεται δυνάμει. ὁ γὰρ ἔχων ἐπιστήμην, μὴ θεωρῶν δέ, δυνάμει ἐστὶν ἐπιστήμων πως, ἀλλ' οὐχ ὡς καὶ πρὶν μαθεῖν. ὅταν δ' οὕτως ἔχη, ἐάν τι μὴ καλῶς ἐνεργεῖ καὶ θεωρεῖ. ἢ ἔσται ἐν τῇ ἀντιφάσει καὶ ἀγνοίᾳ,—α μαθεῖν must have preceded.

The distinction between knowing and thinking is therefore still unclear in *De an.* II 5. Aristotle uses here more or less indiscriminately the terms θεωρεῖν, νοεῖν, φρονεῖν, and νοῆσαι for what we call thinking, and refers to knowing by μανθάνειν and λαμβάνειν ἐπιστήμην. In *De an.* III 4, on the other hand, νοεῖν is identical with μαθεῖν and εὐρεῖν and means therefore 'knowing'. Thus confusion is possible. Hamlyn (1968) 102-103 *ad* 417^b16 is aware of this. Yet he writes: 'There is a constant tendency for Aristotle to run thinking and knowing together'. This is wrong, for it is clear that in both chapters Aristotle distinguishes between knowing and acquiring science on the one hand, and thinking or contemplating the known object on the other hand. Presumably, Aristotle has not

made the formulations in 417^b16-28 correspond quite to the more differentiated view set out in II 5, 417^a21-^b2, ^b9-16, and III 4.

Hamlyn writes further: 'there is something wrong with Aristotle's attempt to apply the *dunamis-hexis-energeia* scheme to perception and to anything parallel with it'. In my opinion, however, Hamlyn takes a much too comprehensive view of this application. Aristotle only wants to show that it is possible to distinguish between degrees of potentiality, and that this distinction also applies to sensation.

Chapter 6: Problems concerning intellective cognition in *De anima* III 4

¹ *De an.* III 4, 429^b22-26. The problem is already mentioned in I 2, 405^b19-23. Cf. *De gen. et corr.* I 7, 323^b18-324^a24; 323^b31-33: ἀνάγκη καὶ τὸ ποιοῦν καὶ τὸ πάσχον τῷ γένει μὲν ὅμοιον εἶναι καὶ ταῦτό, τῷ δ' εἶδει ἀνόμοιον καὶ ἐναντίον. In *De an.* II 5, 416^b32-417^a2 Aristotle appears to refer to the passage cited.

² *De an.* III 4, 429^b29-430^a2. Aristotle refers to III 4, 429^a13-18. My interpretation agrees with that of Hicks 494 *ad* ^b29 and that of Ross (1961) 294 *ad* 429^b29-430^a2; cf. already Brentano 136-137. Rodier 455 *ad* 429^b29 gives an entirely different interpretation. Hicks 356 *ad* 417^b2 states somewhat misleadingly that in this passage (429^b29) Aristotle corrects the description of νόησις as πάσχειν τι. On the contrary, Aristotle explains here how under the conditions indicated (εἰ ὁ νοῦς ...) νοεῖν can yet be πάσχειν.

Seidl 105-106 writes in reference to the potential mind in question: '((this mind)) ist also keineswegs eine 'tabula rasa'; and: 'verhält sich zwar noch "potentiell", aber durchaus nicht "passive"'. This seems hard to reconcile with what Aristotle says about the mind *De an.* III 4.

³ *De an.* III 4, 429^b26: εἰ νοητὸς καὶ αὐτός;.

I translate νοητὸς as 'object of insight', parallel to αἰσθητὸς, 'object of sensation'. However, in this passage νοητὸς primarily indicates an ontological status: 'of noetic standing', 'of a noetic nature', 'having the *status* of being an object of *insight*'. In 429^b29 especially (ποιεῖ νοητὸν: grants a noetic status to...) this is the only possible interpretation. Accordingly, one can translate 429^b26 (εἰ νοητὸς καὶ αὐτός;) as Rodier I 179 does: '...si l'intellect est lui-même intelligible', that is to say, 'whether it is such that it is (able to be) object of intellection'.

⁴ *De an.* III 4, 429^b27-28: ἡ γὰρ τοῖς ἄλλοις νοῦς ὑπάρξει, εἰ μὴ κατ' ἄλλο αὐτὸς νοητὸς, ἐν δέ τι τὸ νοητὸν εἶδει.

An hypothesis is concerned here, an adequate or less adequate solution to the problem raised. Cf. Hicks 494 *ad* ^b27: 'two alternative hypotheses are conceivable'.

⁵ Cf. Plato *Parm.* 132c: Τί δέ δή; εἰπεῖν τὸν Παρμενίδην, οὐκ ἀνάγκη ἢ τὰλλα φῆς τῶν εἰδῶν μετέχειν ἢ δοκεῖ σοι ἐκ νοημάτων ἕκαστον εἶναι καὶ πάντα νοεῖν, ἢ νοήματα ὄντα ἀνόητα εἶναι;

Aristotle seems to be faced by a similar difficulty. In the second hypothesis which he advances he seems to opt for the second possibility mentioned by Plato.

⁶ *De an.* III 4, 429^b28-29: ἡ μειγνύμενον τι ἔξει, ὃ ποιεῖ νοητὸν αὐτὸν ὥσπερ τὰλλα.

⁷ Trendelenburg 398 *ad* 429^b28 ἐν δέ τι τὸ νοητὸν εἶδει rightly remarks: 'Haec est communis, quae statuitur, conditio'; cf. Rodier 455 *ad* 429^b28. This is presupposed for both possible solutions of the problem.

Hicks 494 *ad* ^b27 and *ad* ^b28-29 sees no direct connection between εἰ μὴ κατ' ἄλλο αὐτὸς νοητὸς and ἐν δέ τι τὸ νοητὸν εἶδει. He states with regard to the second solution advanced by Aristotle that 'If it is not *per se* that mind is an object of thought, it must be in virtue of something else, κατ' ἄλλο τι'. But this something else must again be νοῦς, for nothing other than νοῦς is capable of making something νοητὸν, so that in this regard there is no difference to the first solution. In the first solution, on the other hand, it cannot be the νοῦς referred to in 429^b27 (αὐτὸς) which is present in things, for this νοῦς is of itself pure potentiality and becomes an actual mind precisely by knowing the things referred to. Hicks, therefore, does not describe correctly the contrast between both solutions.

⁸ *De sensu* 5, 443^a9-12: Τὰ τε γὰρ στοιχεῖα ἄσσμα, οἷον πῦρ ἀήρ γῆ ὕδωρ, διὰ τὸ τὰ τε ὑγρά καὶ ξηρά αὐτῶν ἄχρυμα εἶναι, ἀν μὴ τι μιν γνύμενον ποιῇ.

⁹ *De sensu* 5, 443^a7 and 443^b5.

¹⁰ As external cause: *De sensu* 4, 441^a29: τὸ δὲ θερμὸν συναίτιον.; cf. 442^a5: δημιουργεῖ and 442^a7: τὸ ἐξω θερμὸν. See also *De sensu* 5, 443^b15-16: τὸ γὰρ θερμὸν τὸ κινεῖν καὶ δημιουργοῦν.

¹¹ Hicks 494 *ad* ^b28-29: 'In that case this something else, which makes mind νοητόν, must be regarded as a foreign admixture, and thus the condition laid down by Anaxagoras, and accepted by A., that mind is ἀμυγής, is violated'. The latter is perhaps not true if it is an actual νοῦς which mixes with that which potentially has νοῦς. But as yet it is not clear that this is what Aristotle means. See below the commentary on III 5, 430^a17-19.

Seidl's interpretation (p. 105): 'So wäre die Folge, dass der Intellekt "mit etwas (d.h. mit Stoffelementen) vermischt" sein müsste, um sich selbst erkennen zu können' cannot, I think, be maintained; for it cannot be Aristotle's intention here to advance a simply absurd solution (a ποιεῖν νοητόν by means of 'Stoffelementen').

¹² *De an.* III 4, 430^a3-4: ἐπὶ μὲν γὰρ τῶν ἄνευ ὕλης τὸ αὐτὸ ἐστὶ τὸ νοοῦν καὶ τὸ νοούμενον. Cf. *Met.* Lambda 9, 1074^b35-1075^a5; ^a3-5: οὐχ ἑτέρου οὖν ὄντος τοῦ νοουμένου καὶ τοῦ νοῦ, ὅσα μὴ ὕλην ἔχει, τὸ αὐτὸ ἐστὶ, καὶ ἡ νόησις τῷ νοουμένῳ μία.

So far, therefore, Aristotle has not needed to answer the question whether τὰλλα (^b27, ^b29) are simply νοητά or, if not, how they become νοητά. Aristotle merely states: καὶ αὐτὸς δὲ νοητὸς ὥσπερ τὰ νοητά. The same parallel is found in ^b29: ὥσπερ τὰλλα and ^b21-22: ὅλως ἄρα ὡς χωριστὰ τὰ πράγματα τῆς ὕλης, οὕτω καὶ τὰ περὶ τὸν νοῦν.

¹³ Cf. *Met.* Lambda 7, 1072^b19-21: αὐτὸν δὲ νοεῖ ὁ νοῦς κατὰ μετὰληψιν τοῦ νοητοῦ. νοητὸς γὰρ γίνεταί θιγγάνων καὶ νοῶν, ὥστε ταῦτ' οὖς καὶ νοητόν.

¹⁴ *De an.* III 4, 430^a5-6: τοῦ δὲ μὴ αἰεὶ νοεῖν τὸ αἴτιον ἐπισκεπτέον. In 430^a5 δὲ stands opposite to μὲν in 430^a3; the problem lies in this opposition. That the mind does not always know is already said by Aristotle in I 3, 407^a22 sqq.: αἰεὶ δὲ δὴ τί νοήσῃ;

¹⁵ On the relation between ὕλη, δύναμις, and ἐνδέχεσθαι μὴ ἐνεργεῖν, and on the relation between the absence of ὕλη, ἐντελέχεια, and αἰεὶ καὶ συνεχῶς ἐνεργεῖν, see *Met.* Theta 8, 1050^b6-34; Lambda 6, 1071^b12-21; Lambda 8, 1074^a34-38; Lambda 9, 1074^b28-1075^a10.

The interpretations of 430^a5-6 given by Rodier 458 and Hicks 479, following Philoponus, do not take sufficiently into account the fact that Lambda 9, 1075^a3-5 (οὐχ ἑτέρου οὖν ὄντος τοῦ νοουμένου καὶ τοῦ νοῦ, ὅσα μὴ ὕλην ἔχει, τὸ αὐτὸ ἐστὶ, καὶ ἡ νόησις τῷ νοουμένῳ μία) must entail a qualification and not a denial of 1074^b35-36 (φαίνεται δ' αἰεὶ ἄλλου ἢ ἐπιστήμῃ καὶ ἡ αἰσθησις καὶ ἡ δόξα καὶ ἡ διάνοια, αὐτῆς δ' ἐν παρέργῳ) inasmuch as the νοῦς is concerned which is merely δυνάμει τὰ εἶδη (*De an.* III 4, 429^a29). One cannot say of this mind as Philoponus 528, 11-12 does: αἰεὶ δὲ πάρεστιν ἑαυτῷ ὁ νοῦς. Cf. *Met.* Lambda 7, 1072^b19-21, cited in n. 13.

However, in connection with the phrase: τοῦ δὲ μὴ αἰεὶ νοεῖν τὸ αἴτιον ἐπισκεπτέον, Rodier 458 writes: 'Cette question forme une sorte de parenthèse'. This view is shared by Themistius, Simplicius, Trendelenburg, Hicks and Theiler. They contrapose ἐπὶ μὲν γὰρ τῶν ἄνευ ὕλης (430^a3) and ἐν δὲ τοῖς ἔχουσιν ὕλην. But in my opinion the phrase referred to belongs to the second element of this opposition and indicates the reason why Aristotle now takes an entirely different view of the object of insight.

It is probably partly due to the opposition mentioned that Alexander arrives at the distinction between, on the one hand, τὰ ἔνυλα (87,5; 108,3) or τὰ τῶν συνθέτων τὸ τί ἦν εἶναι τε καὶ τὰ τούτων εἶδη (87,24) and, on the other hand, τὰ τῇ αὐτῶν φύσει νοητά, (87,28-29) or τὸ αὐλὸν εἶδος (108,3), which are κατ' ἐνέργειαν νοητά whereas τὰ ἔνυλα are merely δυνάμει νοητά (87,28-29). We find the same distinction in Themistius. See, for τὰ ἔνυλα εἶδη, 98,1; 99,3; 100,2; 101,7; and, for τὰ φύσει νοητά, 98,1; cf. 115,5-9; 7-9: ἡ γὰρ ἐλάττωσις αὐτῷ πρὸς τὸν θεῖον νοῦν οὐχ ὅτι μηδέποτε δύναται νοεῖν τὰ αὐλα εἶδη, ἀλλ' ὅτι μὴ συνεχῶς καὶ αἰεὶ.

According to Alexander and Themistius, both the ἔνυλα εἶδη and the αὐλα εἶδη are objects of human cognition. This view appears to be generally held among the Greek and Arabian interpreters (see further in ch. 9). One also finds this view in e.g. Hicks 500 *ad* ^a14 τῷ πάντα γίνεσθαι: 'The term ὄντα ((429^a24)) must include material as well as im-

material things'; Hamlyn (1968) 139; Tricot (1977) 180 n. 2. It is an untenable view, however, since Aristotle holds that the human mind does not have direct knowledge of the immaterial. See *De an.* III 7, 431^b17-19; III 8, 432^a3-4: ἐπει δὲ οὐδὲ πράγμα οὐθὲν ἔστι παρὰ τὰ μεγέθη, ὡς δοκεῖ, τὰ αἰσθητὰ κεχωρισμένον, ((...)); see further part I, ch. 8, n. 9.

This must be taken into account in the interpretation of *De an.* III 4, 430^a3-7. The view which Aristotle eventually takes of τὰ ἄνευ ὕλης in connection with human cognition must therefore entail a qualification of the view of the immaterial which he expounds here (430^a3-5) in relation to the problem of the mind's self-knowledge. Here he starts off by light-heartedly introducing a thesis (ἐπὶ μὲν γὰρ ...) which appears to derive from a chapter on the self-knowledge of the divine νοῦς (*Met.* Lambda 9; cf. esp. 1075^a3-5) and which poses no problems in that context. In relation to human cognition, however, the same thesis raises a problem.

¹⁶ *De an.* III 4, 430^a6-7: ἐν δὲ τοῖς ἔχουσιν ὕλην δυνάμει ἕκαστον ἔστι τῶν νοητῶν.

Most authors have not regarded this sentence as the answer or a partial answer to the question asked. For a survey of views, see Rodier 458 *ad* 430^a5-6. Ross (1961) 295 *ad loc.* writes: 'A. does not appear to discuss this question ((τοῦ δὲ μὴ αἰε νοεῖν ...)) anywhere'. I am of the opinion, however, that this question is not only (partly) answered in 430^a5-6, but that it remains the central issue in *De an.* III 5 too. Thomas *Comm. L.* III, l. IX, no. 727 does consider the remark in ^a6-7 to be an answer to the question in ^a5-6: 'Quod ideo est, quia in rebus habentibus materiam, species non est intelligibilis secundum actum'. But his explanation of ^a6-7 (see esp. *L.* III, l. X, no. 731) cannot, I think, be maintained.

¹⁷ *De an.* III 4, 430^a7: ὥστ' ἐκείνοις μὲν οὐχ ὑπάρξει νοῦς.

Cf. Rodier I 181: 'De sorte que ces choses ne sauraient posséder l'intellect'; and Hicks 498 *ad* ^a6: 'A. infers that material things are not νοῦς, for it is not with potential νοητὰ but with actual νοητὰ that νοῦς is identical in the operation of thinking'. The possibility suggested in 429^b27-28 (cited in n. 4) is thus rejected.

¹⁸ *De an.* III 4, 430^a7-8: ἄνευ γὰρ ὕλης δύναιμις ὁ νοῦς τῶν τοιοῦτων.

According to the translations by Rodier, Hicks, Theiler, Hamlyn, and Tricot, ἄνευ ὕλης qualifies τῶν τοιοῦτων in this passage. Thomas *Comm. L.* III, l. IX, no. 727, Nuyens 295 n. 106, Ross (1961) 295 *ad* 430^a2-9, and Barbotin 81 regard it as qualifying δύναιμις. Ross writes: 'The conclusion is that reason does not belong to the objects of sense, since reason is the immaterial power of apprehending them (sc. while they contain matter in their nature)'. Whether one opts for one or the other interpretation, in both cases there is an incongruence between νοῦς and that which should be object of insight.

¹⁹ *De an.* III 4, 430^a8-9: ἐκείνῳ δὲ τὸ νοητὸν ὑπάρξει. Cf. n. 5. Hicks 498 *ad* ^a8 writes: 'ἐκείνῳ δὲ, int. τῷ νῷ, it will have the attribute νοητός'; and: 'The sentence is equivalent to the statement ὁ νοῦς νοητός ἔσται'. This is also Rodier's view 458 *ad loc.* He translates (I 180): 'à l'intellect, au contraire, appartient le (caractère d'être) intelligible'.

The various authors do not comment on this sentence. But it is clear that in their view Aristotle here is talking about the human mind, the mind which is the overall subject of *De an.* III 4. But this interpretation can hardly be maintained if Aristotle means by νοητὸν: possessing *in actu* a noetic status (cf. n. 3). For the human νοῦς dealt with in this chapter is as νοῦς still pure potentiality and to this extent cannot already be called νοητός. Even if this sentence is read in the light of the first interpretation of 430^a6-7 mentioned in the following paragraph (of my text), it remains unclear in what sense this purely potential νοῦς can be 'intelligible'. Moreover, Aristotle writes elsewhere, *Met.* Lambda 7, 1072^b20-21: νοητός γὰρ γίγνεται θιγγάνων καὶ νοῶν (cf. n. 13).

Thus the νοῦς only becomes νοητός when it knows something other than itself. In the case of the human νοῦς, this other something is the physical, material world, which also appeared to be merely δυνάμει νοητὸν, however, and which therefore cannot as such be known by the mind. The way in which the mind is potential and is to that extent not actually distinct from the embodied soul resembles, therefore, the way in which the εἶδος of the physical thing belongs only potentially to matter and is not actually distinct from matter. And that seems to be why Aristotle writes: ὅλως ἄρα ὡς χωριστὰ τὰ πράγματα τῆς ὕλης, οὕτω καὶ τὰ περὶ τὸν νοῦν (*De an.* III 4, 429^b21-22); and perhaps also: μεμιγμένον τι

ἔξει, ὃ ποιεῖ νοητὸν αὐτὸν ὥσπερ τᾶλλα (b28-29); and καὶ αὐτὸς δὲ νοητὸς ἐστὶν ὥσπερ τὰ νοητά (430^a2-3).

When Aristotle says further on that νοῦς has as its object of knowledge ὅσα ἄνευ ὕλης (III 6, 430^b30; which according to some—see n. 18—should also be read into 430^a7-8), he seems to be referring to the πράγματα inasmuch as these are χωριστά τῆς ὕλης (429^b21-22). He cannot be talking about immaterial things, however, as appears from the preceding passage (429^b10-21). Nor can he mean the result of an abstracting operation, for in that case, according to 429^b21-22, the νοῦς itself would also be the object of such an operation. By τὰ ἄνευ ὕλης Aristotle therefore simply means ἡ οὐσία καὶ τὸ τί ἦν εἶναι of the material thing; see *Met.* Lambda 9, 1075^a1-2; *De an.* III 6, 430^b26-30. Parallel to this is αἴσθησις: τὸ δεκτικὸν τῶν αἰσθητῶν εἰδῶν ἄνευ τῆς ὕλης (*De an.* II 12, 424^a17-19; cf. III 2, 425^b23-24).

Thus the question which Aristotle faces seems to be in what way and by what cause the πράγματα on the one hand and the νοῦς on the other are χωριστά τῆς ὕλης, i.e. actually possess a noetic status. The problem, therefore, concerns the possibility of the noetic in a world characterized by materiality.

If these considerations are sound, ἐκείνω (430^a8) must refer to the divine, immaterial νοῦς, which, in contrast to the human νοῦς and the object of its knowledge, is noetic simply or of itself.

²⁰ *De an.* III 4, 430^a6-7, cited in n. 16. Rodier I 181 translates ^a6-7 as follows: 'Mais, dans les choses qui ont de la matière, ce (n') est (qu') en puissance que réside chacun des intelligibles'.

²¹ Cf. Hicks 500-501 *ad* ^a14, concurring with Zabarella: 'In themselves they are actually intelligible and need no intellect to make them so, but not as they are presented to our intellect'. At this point scholars proceed to introduce abstraction.

Hicks 498 *ad* ^a6 writes: 'They are only potential νοητά unless and until the mind by thinking them transforms them from potential into actual νοητά'; and Theiler 142 *ad* 430^a6. '(((...))) bis sie der Geist im Denken von der Materie abtrennt und in verwirklichte Denkgegenstände verwandelt'. Cf. Alexander 84, 19-21, who already says to same the effect: ποιεῖ γὰρ ὁ νοῦς καὶ τὰ αἰσθητά αὐτῷ νοητά χωρίζων αὐτά τῆς ὕλης καὶ ἐστὶν αὐτοῖς τό εἶναι θεωρῶν (similarly e.g. 87,24-26; 88,3-5; 90,2-6; 108,3-7 and 14-15); and Themistius 97,37-98,2: (((...))) ὁ νοῦς αὐτά νοητά ποιεῖ τῆς ὕλης ἀποτεμνόμενος (((...))).; Thomas *Comm.* L. III, l. VIII, no. 716: 'Naturalia vero intelliguntur per abstractionem a materia individuali', and L. III, l. X, no. 730: 'Intellectus autem agens facit ipsa intelligibilia esse in actu, quae prius erant in potentia, per hoc quod abstrahit ea a materia; sic enim sunt intelligibilia in actu, ut dictum est'; Brentano 164: 'Es muss also etwas Geistiges sein, was, in dem sensitiven Theile gegenwärtig, auf ihn jenen Einfluss übt, der mittelbar die Bewegung der intellectiven Seele und das geistige Erkennen zur Folge hat' (cf. 173-174).

Nuyens too writes (p. 296): 'Ainsi les νοητά doivent d'abord être amenés de leur état de puissance au stade de l'acte'. But at the end of his discussion of *De an.* III 4 he puts the interpreter to the choice: 'Now this actualization can either be assigned to the knowing subject itself, or to a principle external to the knowing subject' (1939) 274.

However, like the problem about the nature of the actualization in question (is it abstraction of matter, as in Alexander, Themistius, Thomas, and Theiler, or something else, as Hamlyn (1968) 140 *ad* 429^a29 states emphatically), this problem disappears when 430^a6-7 is given the interpretation which I have proposed.

²² Alexander, Themistius, and Thomas, followed without exception, it seems, by later interpreters, give the firstmentioned interpretation. On the other hand Alexander, for instance, does mention the context which makes the second interpretation plausible; see 88,26-89,11. 89,1-2: τό τε γὰρ μάλιστα ὁρατόν, τοιοῦτον δὲ τὸ φῶς, καὶ τοῖς ἄλλοις τοῖς ὁρατοῖς αἷτιον τοῦ εἶναι ὁρατοῖς. Cf. also Plato *Resp.* VI 509b: Τὸν ἥλιον τοῖς ὁρωμένοις οὐ μόνον οἶμαι τὴν τοῦ δρᾶσθαι δύναμιν παρέχειν φῆσεις, ἀλλὰ καὶ τὴν γένεσιν καὶ αὔξησιν καὶ τροφήν, (((...))). Καὶ τοῖς γινωσχομένοις τοίνυν μὴ μόνον τὸ γινώσκεισθαι φάναι ὑπὸ τοῦ ἀγαθοῦ παρεῖναι, ἀλλὰ καὶ τὸ εἶναι τε καὶ τὴν οὐσίαν ὑπ' ἐκείνου αὐτοῖς προσεῖναι, (((...))).

²³ Cf. *Met.* Lambda 7, 1072^b20-21, cited in n. 13.

²⁴ Cf. *De an.* II 8, 420^a26-29; *De sensu* 3, 439^a10-13 and b16-18.

Chapter 7: The mind in *De anima* III 5

¹ *De an.* III 5, 430^a10-14: 'Ἐπεὶ δ' ἐν ἀπάσῃ τῇ φύσει ἐστὶ τὸ μὲν ὕλην ἐκάστω γένει (τοῦτο δὲ ὁ πάντα δυνάμει ἐκείνα), ἕτερον δὲ τὸ αἴτιον καὶ ποιητικόν, τῷ ποιεῖν πάντα, οἷον ἡ τέχνη πρὸς τὴν ὕλην πέπονθεν, ἀνάγκη καὶ ἐν τῇ ψυχῇ ὑπάρχειν ταύτας τὰς διαφοράς.

² *De gen. an.* I 20, 729^b12-18; cf. I 22, 730^b11-15. In the first passage we find on the one hand the terms τὸ παθητικόν, τὸ κινούμενον, and on the other hand the terms τὸ ποιητικόν, τὸ ποιοῦν, τὸ κινεῖν. Notice the term φύσις in 730^b19: the comparison applies to ἡ τέχνη and ἡ φύσις in general; see also *De gen. et corr.* II 9, 335^b29-33: τῆς μὲν γὰρ ὕλης τὸ πάσχειν ἐστὶ καὶ τὸ κινεῖσθαι, τὸ δὲ κινεῖν καὶ ποιεῖν ἑτέρας δυνάμεως. Δῆλον δὲ καὶ ἐπὶ τῶν τέχνῃ καὶ ἐπὶ τῶν φύσει γινομένων.

³ *De gen. an.* I 22, 730^b11-15: ὥσπερ οὐδ' ἀπὸ τοῦ τέκτονος πρὸς τὴν τῶν ξύλων ὕλην οὐτ' ἀπέρχεται οὐθέν, οὔτε μόριον οὐθέν ἐστιν ἐν τῷ γινομένῳ τῆς τεκτονικῆς, ἀλλ' ἡ μορφή καὶ τὸ εἶδος ἀπ' ἐκείνου ἐγγίνεται διὰ τῆς κινήσεως ἐν τῇ ὕλῃ.; Cf. *De gen. et corr.* II 9, 336^a2-3: τὴν κατὰ τὸ εἶδος αἰτίαν. See also *De an.* II 7, 418^b13-20: light is the effect which is achieved in the transparent by something else, the cause of the effect, without this something else entering the transparent; for: οὔτε γὰρ δύο σώματα ἅμα δυνατόν ἐν τῷ αὐτῷ εἶναι (^b17).

⁴ *De gen. et corr.* I 7, 323^b31-33, cited ch. 6 n. 1

⁵ Cf. *De gen. an.* II 1, 734^b34-36: ((the cause is)) ἡ κίνησις ἡ ἀπὸ τοῦ γεννήσαντος τοῦ ἐντελεχεῖα ὄντος ὃ ἐστὶ δυνάμει τὸ ἐξ οὗ γίνεται, ὥσπερ καὶ ἐπὶ τῶν γινομένων κατὰ τέχνην.

On the cause's externality to the object of its action, see also *De an.* II 5, 417^a6-9; ^a7-9: ((...)) καθάπερ τὸ καυστὸν οὐ καίεται αὐτὸ καθ' αὐτὸ ἄνευ τοῦ καυστικοῦ. ἔκαιε γὰρ ἂν ἑαυτὸ. καὶ οὐθὲν ἑδεῖτο τοῦ ἐντελεχεῖα πυρὸς ὄντος.; *Met.* Theta 1, 1046^a11-13; *Theta* 8, 1049^b24-29. Cf. Nuyens 300: 'la technique est extérieure à la matière'. Thomas *Q.D. de an.* a. 5 indeed advances this as an objection to his own interpretation of ἐν τῇ ψυχῇ (430^a13). Nuyens 300 n. 122 shows that Thomas's defence is weak. See also Hicks 500 *ad* ^a14, καὶ ἔστιν ὁ μὲν τοιοῦτος νοῦς. The connection between the argumentation which Rist 506 presents in relation to 430^a12-13 (οἷον ἡ τέχνη πρὸς τὴν ὕλην πέπονθεν) and the conclusion which he reaches ('Aristotle then means by his phrase ἐν τῇ ψυχῇ "inside the individual soul"') is not clear to me.

⁶ Hicks 499 *ad* ^a10-11 and Theiler 143 *ad* ^a11 clarify the use which Aristotle makes of the term γένος (430^a11) here by referring to texts in which the term means 'category'. But it seems to me that the term is here closer to the term φύσις, as in *Met.* Epsilon 1, 1026^a23-25: ἀπορήσειε γὰρ ἂν τις πότερόν ποθ' ἡ πρώτη φιλοσοφία καθόλου ἐστὶν ἡ περὶ τι γένος καὶ φύσιν τινὰ μίαν.; cf. 1025^b19; ^b8; etc. It is striking that commentators have not noted that a *genus* of soul is concerned here. Accordingly, they have not asked which kinds of soul, belonging to this genus, Aristotle is referring to. Nor is the connection made with *De an.* I 1, 402^b3 (διαφέρουσα γένει) and with II 2, 413^b26 (ψυχῆς γένος ἕτερον).

⁷ The last mentioned argument is already found in Philoponus 536, 15-17: εἰ γὰρ κατ' αὐτὸν αἰεὶ ἐνεργεῖ, οὐκ ἦν πρότερον δυνάμει. ὁ δὲ Ἀριστοτέλης λέγει ὅτι πρότερον δυνάμει ἦν.; cf. 539, 5-7. I do not agree with the way Philoponus works this out in detail.

Most scholars, however, have read ἐν τῇ ψυχῇ as 'in every (human) soul'. Nuyens 300 maintains on the other hand: 'La question de savoir si, par exemple, cet élément actualisateur est quelque chose d'intrinsèque ou d'extérieure à l'âme, ne se trouve ni posée ni résolue à cet endroit'. Guthrie 325 is also opposed to the current interpretation mentioned, though his arguments are different from mine. More on this question later; taken by themselves, the arguments which I have given are perhaps not conclusive.

⁸ *De an.* I 1, 402^b1-3: πότερον ὁμοειδῆς ἅπανα ψυχὴ ἢ οὐ. εἰ δὲ μὴ ὁμοειδῆς, πότερον εἶδει διαφέρουσα ἢ γένει.

⁹ Cf. *De an.* I 1, 402^b3-5, cited ch. 4 n. 7. On the term ἀνθρώπινος, cf. *E.N.* X 7, 1177^b26-34, cited ch. 4 n. 7 and *Met.* Lambda 9, 1075^a9; ὁ ἀνθρώπινος νοῦς in contrast with the νοῦς of the Prime Mover.

¹⁰ *De an.* I 4, 408^b29, cited ch. 4 n. 37.

¹¹ *De an.* II 2, 413^b25-27, cited ch. 4 n. 37. Cf. *Pol.* III 13, 1284^a3 sqq.

Though Hicks 184 *ad* 402^b2 (cited n. 8) refers to *Met.* Iota 8-10 in order to clarify ἕτερον εἶναι τῷ εἶδει and ἕτερον εἶναι τῷ γένει, he does not show that what Aristotle says

in Iota 10 (1058^b28-29: ἀνάγκη ἕτερον εἶναι τῷ γένει τὸ φθαρτὸν καὶ τὸ ἀφθαρτον.; cf. 1059^a10-14) makes it likely that he uses the term γένος emphatically in 423^b26. I am not convinced by Nuyens's comment 274 n. 32 (ψυχῆς γένος ἕτερον = 'de par son espèce, quelque chose d'autre que l'âme').

¹² That it is also possible to speak of 'soul' in relation to God appears from *De an.* I 1, 402^b5-8.

¹³ *De an.* I 3, 407^a2-b11; I 4, 408^b18-29; II 2, 413^b24-25.

¹⁴ Cf. the distinction between man inasmuch as he has νοῦς (*De an.* I 4, 408^b27: τοῦ ἔχοντος ἐκεῖνο, ἢ ἐκεῖνο ἔχει.; III 4, 429^a22: ὁ ἄρα καλούμενος τῆς ψυχῆς νοῦς) and the νοῦς itself (408^b25: αὐτὸ δὲ; ^b27: ἐκεῖνο).

¹⁵ *De an.* I 4, 408^b27: ἢ ἐκεῖνο ἔχει.

Alexander too identifies what he calls ὁ ποιητικὸς νοῦς (88,24) with the Prime Mover (89,18: τὸ πρῶτον αἴτιον); cf. 108,22-23: θύραθεν ἐστὶ λεγόμενος νοῦς ὁ ποιητικὸς, οὐκ ὦν μῶριον καὶ δύναμις τις τῆς ἡμετέρας ψυχῆς, ἀλλ' ἐξωθεν γινόμενος ἐν ἡμῖν.

Only few recent authors are of the same opinion: Anscombe 58; Clark 174; Guthrie 322 sqq. Nuyens 303 too holds that τὸ αἴτιον καὶ ποιητικόν (430^a12) 'are external to the human soul'. In view of my argumentation, however, he is wrong in saying that 'il n'y a pas la moindre indication permettant de croire que par le ποιητικόν il désignerait l'intelligence divine'; we shall find more indications in the rest of *De an.* III 5. But Nuyens states: 'cette identification serait en contradiction avec sa notion de Dieu dans la *Métaphysique*' (p. 303) and he refers with approval to Ross 153. Ross speaks of 'the purely deistic doctrine of the *Metaphysics*' and says: 'a description of Him as having all our knowledge before we have it, and imparting it to us, would be inconsistent with the description of Him in *Λ* as knowing only Himself'.

To this it can be objected, first, that the divine νοῦς in *Met.* Lambda is in the first place called Prime Mover (see Lambda 7) and causes movement by being loved (1072^b3). So there is some relation to sub-divine reality after all. In fact this relation is the very reason why Aristotle introduces the immaterial divine νοῦς (see Lambda 6). See, opposite Ross, Happ (1968) and below n. 30. Secondly, the relation which in that case exists between the divine and the human mind according to *De an.* III 5 need not be understood in the way that Ross's opponent (Zabarella, following Alexander 89,1 sqq.) does; in Ross's words: 'having all our knowledge before we have it, and imparting it to us'. Alexander too holds that the human νοῦς identifies itself directly with the divine νοῦς (89,21-23: ὃν ὁ νοῶν νοῦς, ὅταν αὐτὸν νοῇ, ἐκεῖνός πως γίνεται, εἴ γε το νοεῖν ἐν τῷ λαβεῖν τὸ εἶδος τὸ νοούμενον καὶ ὁμοιωθῆναι αὐτῷ.) and in this manner acquires 'the divine knowledge'. Against this view, see ch. 6 n. 15 and part I ch. 8 n. 9.

Guthrie's view of the relation between the mind of God and the object of its action differs in turn from that of Alexander. Guthrie writes (p. 324): 'the First Cause calls latent human thoughts into activity'; and p. 327: 'so our *nous*, whose objects are within it, is directly activated by the supreme, supra-cosmic *nous*, or God'; and p. 318 n. 1 *ad* τῷ ποιεῖν πάντα: 'Sc. all intelligible forms, the objects of thought; i.e. it makes them intelligible, and offers them, as it were, to the passive *nous*'. According to Guthrie, then, God carries out the operation which is prior to cognition proper. According to others, this operation is performed by man, since they think that τὸ ποιητικόν (430^a12) indicates a function of the human mind. Apart from the fact that he assigns this operation to the divine νοῦς, therefore, Guthrie's interpretation of the nature of the operation seems to follow the traditional interpretation. So does Nuyens's 296.

Guthrie's point of view is very close to that of various Arabian interpreters of Aristotle. They also maintain that a supra-human mind, which however they emphatically subordinate to the mind of God, raises human thought lacking a truly noetic quality to a noetic level.

According to Nuyens, Aristotle does not regard τὸ ποιητικόν (430^a12) as a function of the human mind. Nonetheless, Nuyens believes that human cognition in Aristotle is introduced by an abstraction which is carried out by man; see ('73-'74) 275-276. On this point, therefore, Nuyens's interpretation is closer to Alexander's.

Although I agree with Guthrie that τὸ ποιητικόν in *De an.* III 5 refers to God or the Prime Mover, my interpretation differs from his and in general from the Neoplatonic interpretations (see ch. 9). For the object of the action of this causative principle can be interpreted alternatively: this object is in my opinion the material world, which of itself possesses a noetic status only potentially and which only acquires this status actually because the mind of God creates some measure of noetic order in the material world, regardless of whether it is an object of human cognition. See above, ch. 6, for the two possible interpretations of *De an.* III 4, 430^a6-7.

¹⁶ *De an.* III 5, 430^a14-17: καὶ ἔστιν ὁ μὲν τοιοῦτος νοῦς τῷ πάντα γίνεσθαι, ὁ δὲ τῷ πάντα ποιεῖν, ὡς ἕξις τις, οἷον τὸ φῶς. τρόπον γάρ τινα καὶ τὸ φῶς ποιεῖ τὰ δυνάμει ὄντα χρώματα ἐνεργείᾳ χρώματα.

¹⁷ Cf. Nuyens 300. Thomas also produces this example as an objection to his interpretation that τὸ ποιητικόν forms part of the human soul. In this context Nuyens quotes with approval Mandonnet (1911) 155-156: 'Nous pensons aussi qu'Averroès est généralement entré dans l'intelligence des doctrines du Philosophe'. Averroes is the main target of criticism in Thomas's *De unitate intellectus contra averroistas*.

Seidl's commentary (p. 119) on the comparison with light seems unsound to me; see ch. 9 for Themistius' views in this context. On the term ἕξις (430^a15), see the comments of Rodier 459-460, Hicks 501, and Guthrie 319. Rodier notes that Alexander and Themistius may have read a different text here (he does not say which), so that ἕξις indicates the result of the action of τὸ ποιητικόν. This would be more in agreement with the way in which Aristotle uses the term in *De an.* II 7.

¹⁸ See ch. 2, esp. n. 16.

¹⁹ *De an.* III 5, 430^a16-17 and *De sensu* 2, 438^b6-8: Ὁρᾶται δὲ ὥσπερ καὶ ἔξω οὐκ ἄνευ φωτός, οὕτως καὶ ἐντός. διαφανὲς ἄρα δεῖ εἶναι.

²⁰ See ch. 2.

²¹ *De an.* III 4, 429^b28-29: ὁ ποιεῖ νοητὸν αὐτὸν ὥσπερ τᾶλλα.

²² *De an.* III 4, 430^a2-5.

²³ Cf. for this parallel Plato *Resp.* VI 508^b-509^a.

²⁴ *De an.* III 4, 430^a6-7: ἐν δὲ τοῖς ἔχουσιν ὕλην δυνάμει ἕκαστον ἔστι τῶν νοητῶν. Cf. ch. 6.

²⁵ *De an.* III 4, 429^b28-29: μεμιγμένον τι ἕξις, ὁ ποιεῖ νοητὸν αὐτὸν ὥσπερ τᾶλλα. Cf. Themistius 108,24, where he quotes Theophrastus: μικτὸν γάρ πως ὁ νοῦς ἔκ τε τοῦ ποιητικοῦ καὶ τοῦ δυνάμει. The same would have to apply to the material thing that is characterized by the possession of an εἶδος. This thing is as such, therefore, the object of the action of God's mind.

According to Guthrie, on the other hand, material things are the object of the action of God's mind inasmuch as they are present in man's mind. See Guthrie 318-319; and also p. 324: 'latent human thoughts' are the object of the action of God's mind. An objection to Guthrie's view is that the human mind, insofar as it is δυνατός (429^a22), cannot have latent thoughts either. The person in possession of such latent thoughts would be entitled to the qualification ἐπιστημῶν κατ' ἐνέργειαν (429^b5-9), which would be at odds with the nature of the potential mind in question (430^a11: ὁ πάντα δυνάμει ἐκείνα).

Others, according to whom the action referred to does not proceed from the mind of God (that is irrelevant here), maintain that sense-images (φαντάσματα) constitute its object. See e.g. Brentano 174; this view is also found in Thomas *Comm. L.* III, l. X, no. 735. Brentano appeals to *De an.* III 7, 431^b2: τὰ μὲν οὖν εἶδη τὸ νοητικὸν ἐν τοῖς φαντάσμασι νοεῖ, and to III 8, 432^a4-5: ἐν τοῖς εἶδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστί.

The purport of the passages cited is different, however, and is indicated by Aristotle slightly further on, III 8, 432^a8-9: ὅταν τε θεωρῇ, ἀνάγκη ἅμα φάντασμά τι θεωρεῖν. Seidl 104 is wrong in supposing that "'Wahrnehmungsobjekte" des Intellekts' are concerned here, for θεωρεῖν is at issue, not a νοεῖν as referred to in *De an.* III 4, 429^a13-14.

A general objection to the interpretations of Guthrie and Brentano is that they assume a mind which, instead of knowing or considering, intervenes and causes the object of its action to undergo an alteration. It seems to me that Aristotle reserves that kind of intervention for the mathematical mind. But no such objection applies to the mind of

God which produces something noetic in material reality. For this mind is merely an end which moves by being pursued; it does not intervene (see *Met.* Lambda 7, 1072^a26: *κινεῖ δὲ ὥδε τὸ ὁρεκτὸν καὶ τὸ νοητὸν.*; 1072^b3: *κινεῖ δὲ ὡς ἐρώμενον*).

²⁶ In other words, Aristotle has indicated here in what way τὰ πράγματα are χωριστὰ τῆς ὕλης. (*De an.* III 4, 429^b21-22). Cf. 430^a7-8 and III 6, 430^b30: ἄνευ ὕλης.

That no kind of abstraction is concerned appears from the context of 429^b21-22. The problem here is how man can have mind in a material world. Once this problem has been solved and it has become clear that and how there are νοητά in the material world, it is possible to say that these νοητά are known simply, just as the αἰσθητά, without prior abstraction, are known ἄνευ τῆς ὕλης (see II 12, 424^a17-19; III 2, 425^b23-24). As light produces an action in matter, which action is more than material and which is capable as such, i.e. without matter, of moving that which is susceptible to it (II 12, 424^b1-3: ἀρχὴν οἶαν τὰ εἶδη δέχεσθαι τῶν αἰσθητῶν), just so the mind of God activates a superior kind of εἶδος in material reality. And this εἶδος too is thus capable as such, without matter, of moving to cognition a susceptible principle.

Some scholars have rigorously respected the parallel between sensory and intellectual cognition and have stated that sensory knowledge also implies abstraction. See e.g. Ando 115-118; p. 116: 'That sensation receives the form of a body without the matter, certainly means that sensation is regarded as an abstraction'. But there remains an inconsistency in this interpretation too, since it entails that sensory cognition, in contrast to intellectual cognition, would not need a separate function to carry out this abstraction. Moreover, Aristotle never talks about abstraction or anything similar in connection with sensory cognition. As we have seen, he takes sensation to be a passive affection, even though in sensation, surely as much as in intellectual cognition, the εἶδη alone (without the matter) constitute the object of knowledge.

Therefore Nuyens 296 is wrong in saying: 'Les αἰσθητά sont les choses individuelles, matérielles, qui existent telles quelles et peuvent de ce chef agir sur la faculté sensitive', whereas the νοητά 'n'existent pas en eux-mêmes, mais seulement comme formes substantielles unies à la matière'. If the above criticism holds good and if what Nuyens says here is thus untenable, then one of the most fundamental starting-points dominating both the ancient and modern interpretations of *De an.* III 4 and 5 cannot be maintained.

²⁷ *De an.* III 5, 430^a14-15: καὶ ἔστιν ὁ μὲν τοιοῦτος νοῦς τῷ πάντα γίνεσθαι, ὁ δὲ τῷ πάντα ποιεῖν.; cf. III 4, 430^a7-9: ἄνευ γὰρ ὕλης δύναμις ὁ νοῦς τῶν τοιούτων.; III 5, 430^a11: ὁ πάντα δυνάμει ἔχειν.; ^a12: τῷ ποιεῖν πάντα and *Met.* Lambda 7, 1072^b18-24.

²⁸ *De an.* I 4, 408^b27 and III 4, 429^b28; cf. *E.N.* X 7, 1177^b28: ἡ θεὸν τι ἐν αὐτῷ ὑπάρχει.; ^b33: ἐφ' ὅσον ἐνδέχεται.; see also n. 25.

²⁹ Cf. on the other hand e.g. Hicks 500-501 *ad* ^a14: 'by cognition, which is merely through abstraction'; Nuyens 296: 'Ainsi les νοητά doivent d'abord être amenés de leur état de puissance au stade de l'acte; c'est là qu'une partie, mais la partie principale, du processus d'intellection'; Ando 166: 'where there is no abstraction, there cannot be any cognition'. Likewise Guthrie, who holds that τὸ ποιητικόν does refer to God or the Prime Mover, makes him the direct cause of human cognition (p. 319): 'Human intellectual activity too demands an external efficient cause, for it results from the arousing of a potentiality to actuality'. The νοητά cannot function as such a cause, according to Guthrie, for 'these are in a sense within the psyche itself'. Guthrie is here referring to *De an.* II 5, 417^b23-24: ταῦτα ((= τὰ καθόλου)) δ' ἐν αὐτῇ πῶς ἐστὶ τῇ ψυχῇ. But what follows διὸ νοῆσαι μὲν ἐπ' αὐτῷ, ὁπότεν βούληται, αἰσθάνεσθαι δ' οὐκ ἐπ' αὐτῷ (^b24-25) shows that a νοεῖν as referred to in *De an.* III 4 cannot be concerned here. For only ὁ ἐπιστήμων ὁ κατ' ἐνέργειαν is capable of ἐνεργεῖν δι' αὐτοῦ (III 4, 429^b5-9). To primary νοεῖν applies, however: ὥσπερ τὸ αἰσθητικὸν πρὸς τὰ αἰσθητά, οὕτω τὸν νοῦν πρὸς τὰ νοητά (429^a17-18), that is to say, νοῦς δὲ ὑπὸ τοῦ νοητοῦ κινεῖται (*Met.* Lambda 7, 1072^a30). Contrary to Guthrie's view, 'the agent which produces the actuality' (of human cognition) has now been completely indicated as far as Aristotle is concerned.

³⁰ Plato *Timaeus* 30^{b-c}. On πρόνοια in Aristotle, see Happ (1968) 77-84: 'Vorsehung und Theodizee'; p. 79: 'In der Zeit nach Aristoteles hat man diese wenigen und knappen Ansätze des Aristoteles zu einer sehr vergeistigten Vorsehungsbegriff nicht mehr weiter

beachtet, sondern sich eher an dem Chorismos der raum-zeitlichen Welt gehalten, den Aristoteles ja ((...)) überdeutlich herausstellt. Man hat dabei Aristoteles gewisz einseitig beurteilt...

³¹ See ch. 6; further discussion in ch. 9.

³² *De an.* III 5, 430^a17-18: καὶ οὗτος ὁ νοῦς χωριστὸς καὶ ἀπαθὴς καὶ ἀμιγῆς, τῇ οὐσίᾳ ὧν ἐνέργεια.

³³ *De an.* III 4, 429^b5: χωριστός; 429^a15: ἀπαθὴς (cf. ^a29: ἀπάθεια); ^a18: ἀμιγῆ.

³⁴ Cf. for the expression τῇ οὐσίᾳ ὧν ἐνέργεια *Met.* Lambda 6, 1071^b20: ἥς ἡ οὐσία ἐνέργεια (said of the Prime Mover); Lambda 7, 1072^b24-30; Lambda 9, 1074^b19-20: ὃ ἐστὶν αὐτοῦ ἡ οὐσία νόησις.

All these passages are concerned with the Prime Mover. Brentano 164, 180, 227, however, sees the ποιητικόν of *De an.* III 5 as a 'bewusstlos wirkende Kraft des geistigen Theiles unserer Seele' (p. 180); to it applies 'dass er nicht denke, sondern wirkend die Gedanken hervorbringe' (p. 221). According to Brentano, this is not in conflict with 430^a22 (ἀλλ' οὐκ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ), since he holds (pp. 182-183) that 430^a22 deals with the mind of God. But Brentano fails to show convincingly that τῇ οὐσίᾳ ὧν ἐνέργεια and ἀεὶ νοεῖν in these chapters are *not* both said of one and the same mind, whereas in *Met.* Lambda similar concepts are indissolubly associated with one another. Moreover, the expression τῇ οὐσίᾳ ὧν ἐνέργεια, if applied to the mind, must primarily mean in Aristotle that this mind actually knows (Ando 34 makes the same objection to Brentano).

Cassirer, who also considers the ποιητικόν to be a function of the human mind, tries to avoid the subsequent contradiction between μὴ ἀεὶ νοεῖν in *De an.* III 4, 430^a5 and οὐκ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ in III 5, 430^a22 by maintaining that the ποιητικόν is in fact 'immer tätig', but that 'damit nicht gemeint sei, dass die tätige Vernunft ein ewiges Denken sei' (p. 176). Again the objection to this view is that activity on the part of the mind implies knowing. Moreover, Cassirer does not sufficiently recognize that the phrase οὐκ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ (430^a22) is equivalent to ἀεὶ νοεῖ. He states incorrectly, therefore (p. 177): 'die tätige Vernunft ist eben nichts anderes als das Moment in der Vernunft das dadurch, dass es reine Energie ist, das Denken in Tätigkeit setzt; sie enthält aber nicht selbst ein Denken. Ihre Tätigkeit ist unserem Denken gar nicht vergleichbar'. A similar view is found in Rist 509. See on the other hand Hicks 502 *ad* ^a18: 'By ἐνέργεια must be understood actual thinking, which is νοῦ ἐνέργεια; cf. 407^a20'. Nuyens 304 shares this view.

Hicks too is unable to indicate how the above-mentioned contradiction can be avoided; cf. p. 505 *ad* ^a22 οὐκ ὅτε μὲν νοεῖ. Nor do we find clear indications in Zeller 570 sqq. and Rodier 464 *ad* 430^a21. Rodier voices here an impression which these authors share, but which they reject on the basis of 430^a13-14 (ἀνάγκη καὶ ἐν τῇ ψυχῇ ὑπάρχειν ταύτας τὰς διαφοράς): 'Du reste, il ((Aristotle)) eût été, sans doute, assez disposé à admettre l'identité de l'intellect qui agit à la pensée divine'. Nuyens 306 *ad* 430^a22 goes a step farther: 'les termes de cette phrase engendrent des difficultés insurmontables pour qui veut maintenir l'interprétation faisant du ποιητικὸς νοῦς une faculté de l'âme humaine'. But Nuyens rejects the view of Van Schilfgaarde (1938) 111 and 263 that the mind of God is concerned here; cf. Van Schilfgaarde (1965) 169. The interpretations given by Barbotin 162 sqq., Ando 40-43, Seidl 119 sqq., Rist 507 sqq., and Hartman 267-269 are not very illuminating on this point.

³⁵ This probably led Averroes to regard the potential mind too as one mind for all mankind. In doing so he draws in a correct manner the logical consequence of the attributes which Aristotle assigns to the mind in *De an.* III 4. But he disregards the intention with which Aristotle discusses the individual human mind and thus fails to make allowance for the qualification of earlier statements (introduced in 430^a5 sqq. (τοῦ δὲ μὴ ἀεὶ νοεῖν ...)) in the representation of Aristotle's final view. Hence it becomes impossible for Averroes to identify the potential mind of *De an.* III 4, which is called χωριστός (429^b5), with the passive mind of III 5, called φθαρτός (430^a24-25: ὁ παθητικὸς νοῦς). On this problem, see n. 50.

³⁶ Cf. Ando 36: 'The attributes which were assigned vaguely to reason in general, when it is taken as a simple entity, might be limited to the active reason, when it is divided into parts'. Ando is referring to Zeller 577 n. 2.

³⁷ *De an.* III 5, 430^a18-19: αἰ γὰρ τιμιώτερον τὸ ποιοῦν τοῦ πάσχοντος καὶ ἡ ἀρχὴ τῆς ὕλης. Seidl 124 n. 17 seems to ignore this passage by turning things around completely. His interpretations give the impression of being far removed from the Aristotelian text.

³⁸ *De an.* III 5, 430^a19-22: τὸ δ' αὐτὸ ἐστὶν ἡ κατ' ἐνέργειαν ἐπιστήμη τῶν πράγματι. ἡ δὲ κατὰ δύναμιν χρόνω προτέρα ἐν τῷ ἐνί, ὅλως δὲ οὐδὲ χρόνω, ἀλλ' οὐχ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ. (Ross considers this passage spurious; but see Furley 48).

³⁹ On the expression ἐν τῷ ἐνί, cf. Rodier 463 *ad* 430^a21. See also *De an.* II 1, 412^a26-27: προτέρα δὲ τῇ γενέσει ἐπὶ τοῦ αὐτοῦ ἡ ἐπιστήμη.

⁴⁰ On ὅλως (430^a21), cf. Hicks 504 *ad* ^a21. The various interpreters have not connected ὅλως and γένει (430^a11). In Philoponus a connection is implied in 539,20-24 combined with 540,25-32.

⁴¹ Cf. *Met.* Lambda 7, 1072^b24-25: εἰ οὖν οὕτως εὖ ἔχει, ὥς ἡμεῖς ποτέ, ὁ θεὸς αἰεί, θαυμαστόν.; Lambda 9, 1074^b19-20; 1075^a5-10: ἔτι δὴ λείπεται ἀπορία, εἰ σύνθετον τὸ νοούμενον. μεταβάλλοι γὰρ ἂν ἐν τοῖς μέρεσι τοῦ ὅλου. ἡ ἀδιαίρετον πᾶν τὸ μὴ ἔχον ὕλην, ὥστε ὁ ἀνθρώπινος νοῦς ἢ ὁ γε τῶν συνθέτων ἔχει ἐν τινι χρόνω (οὐ γὰρ ἔχει τὸ εὖ ἐν τῷ δι' ἢ ἐν τῷ δι', ἀλλ' ἐν ὅλῳ τινὶ τὸ ἀρίστον, ὃν ἄλλο τι) οὕτως δ' ἔχει αὐτῇ αὐτῆς ἡ νόησις τὸν ἅπαντα αἰῶνα.

Perhaps Ando's translation 40 n. 4 should be preferred to that of Ross (1924) II 397, Tricot (1974) 705-706, Gadamer 43, or Bonitz-Seidl (1980) 269. Ando translates: 'Just as human reason or the reason of a composite being is in a certain period of time, so is the (divine) self-thought throughout eternity, for since this (i.e. divine reason) is different from that (i.e. human reason), it enjoys the good not just in this or that period, but the best in the whole'.

Those who hold that by τὸ ποιητικόν (430^a12) Aristotle refers to a function of the human mind are thus, however, forced to postulate a concealed knowledge in the human mind. Ross (1924) I cxliv-cxlv shows two variants of this view: 'that there is something in us that actually knows already, some element which is cut off from our ordinary consciousness so that we are not aware of this pre-existing knowledge'; and: 'the fact that active reason already knows all intelligible objects makes it possible for the passive reason, in itself a potentiality, actually to know, and for the knowable actually to be known'. But both interpretations are at odds with *An. Post.* II 19, 99^b26-27 and ^b32-34.

Ross (1961) 45-47 presents an entirely different, equally unconvincing interpretation.

⁴² *De an.* III 5, 430^a22-25: χωρισθεὶς δ' ἐστὶ μόνον τοῦθ' ὅπερ ἐστὶ, καὶ τοῦτο μόνον ἀθάνατον καὶ αἰδῖον (οὐ μνημονεύομεν δέ, ὅτι τοῦτο μὲν ἀπαθές, ὁ δὲ παθητικὸς νοῦς φθαρτός). καὶ ἄνευ τούτου οὐθὲν νοεῖ.

⁴³ *De an.* I 4, 408^b18-19: ὁ δὲ νοῦς ἔοικεν ἐγγίνεσθαι οὐσία τις οὐσα.

⁴⁴ Χωρισθεὶς (430^a22), therefore, corresponds directly with ἐγγίνεσθαι οὐσία τις οὐσα (408^b18-19) and indicates that the mind of God can be considered according to its effect in the (perishable) whole of body and soul (408^b27: τὸ ἔχον ἐκείνο.; ^b28-29: τὸ κοινόν on the one hand, and according to its nature as such (430^a23: ὅπερ ἐστὶ; 408^b25: αὐτὸ δὲ) on the other hand.

Cf. Nuyens 306 on χωρισθεὶς: 'le participe implique la séparation d'une chose qui était unie auparavant à une autre'; the same view in Hicks 505-506 *ad loc.*, following Zabarella. But Hicks goes on to argue: 'Hence χωρισθεὶς is not applicable to God or the whole genus of abstract substances ((...)): such substances have always been without matter, as they now are'; cf. Brentano 206. The latter statement is true, but need not rule out μῖξις, as long as it is seen as equally taking place in time and as something which does not diminish the mind of God as such. See again in this context Nuyens 306: 'l'action exercée sur la pensée humaine par le ποιητικὸς νοῦς est quelque chose qui se produit en dehors de son essence'.

See also *Met.* Alpha 7, 989^a34-^b1: διὰ τὸ συμβαίνειν ἄμικτα δεῖν προὔπαρχειν.; and ^b4: τῶν γὰρ αὐτῶν μῖξις ἐστὶ καὶ χωρισμός. These passages too show that the term χωρισθεὶς must correspond to a μῖξις which once preceded. Hicks on the other hand concludes that only a 'mental separation' is in question; that is also the view of Tricot (1977) *ad loc.* It seems to me that the text does not justify this. Most authors believe that Aristotle does mean a 'real separation'; see e.g. Theiler *ad loc.* in Ross (1961) 47-48.

Brentano 206 asks: 'Hätte nämlich jenes χωριστός, das zuvor dem νοῦς ποιητικός beigelegt wurde, eine substantiale Trennung vom leiblichen Menschen bezeichnet, wie könnte Aristoteles jetzt fortfahren: "Nachdem er aber getrennt worden"?'. This difficulty vanishes when Aristotle is interpreted in such a way that the same mind of God which is χωριστός can also enter into a μίξις with the human soul, potentially mind, without it in itself being in any manner less χωριστός.

Nor is the μίξις in question here at odds with the fact that Aristotle calls the mind of God ἀμιγής (430^a17-18). For it is not the mind of God which becomes mixed with something else through this μίξις. On the other hand the potential mind is called ἀμιγής (III 4, 429^a18), since it is not mixed with anything corporeal; see Barbotin 163-165.

⁴⁵ Cf. *De an.* I 4, 408^b24-29 and II 2, 413^b24-27.

The mind of God unites with τὸ κοινόν, ὃ ἀπόλῳλεν (408^b28-29; cf. ^b24-25: μαραίνεται ἄλλου τινὸς ἔσω φθειρομένου). Ross (1961) 47 too compares 430^a22-24 with 408^b24-29. Because his interpretation of the last passage diverges from mine, the conclusion which he reaches is entirely different.

⁴⁶ Nuyens 309 writes: 'c'est que, dans le système aristotélicien, il n'y a pas de place pour l'immortalité personnelle'. Nuyens's argumentation here is very detailed and accurate. The same view in Barbotin 215; cf. further A. Mansion (1953); Guthrie 322.

⁴⁷ *De an.* III 5, 430^a23-24, cited n. 42. Cf. I 4, 408^b27-29.

⁴⁸ Cf. Trendelenburg 403 *ad loc.*: 'Ita quidem Platonis doctrina relinquitur, qui summam cogitationem in recordatione posuit'; and Nuyens 309: 'de la préexistence du ποιητικόν nous n'avons aucun souvenir'; Cassirer 178.

Since the mind of God has no memory, as appears from 408^b27-29 (it is not susceptible to it; 430^a24 ἀπαθής), it will not send memory-images to the object of its action. Inasmuch as this object is the human mind, this mind will therefore have no memory of the life of the divine mind (for the term 'life', cf. *Met.* Lambda 7, 1072^b26-27: ἡ γὰρ νοῦ ἐνέργεια ζωή).

Guthrie turns things around (p. 321): 'Hence we cannot think of memories being carried over from our present state of existence in the body into another'. This seems to be at odds with Guthrie's characterization of this passage: 'a note explaining why Platonic *anamnesis* is impossible in Aristotle's theory'. I am not convinced by the interpretation suggested by Hicks 507-508 and accepted by Hamlyn (1968) 141, namely that Aristotle is discussing human forgetfulness here. The objection which Hicks himself mentions ('the reason assigned, viz. the impassivity of intellect, seems quite unsuitable to the effect') seems to me insurmountable. Theiler 144 *ad loc.* tries to get around this objection by finding the reason in the perishableness of the human mind (430^a24-25: ὁ δὲ παθητικός νοῦς φθαρτός); this view is already found in Rolfes 183. However, the text does not seem to justify this. Moreover, the meaning of 430^a24 would be opposite to what is said in 408^b27-29: precisely the perishable mind has memory, whereas the eternal mind does not and is absolutely impassive to (sensory) images (408^b29: ἀπαθής).

Still another interpretation is presented by Ross (1961) 48: 'we do not, however, after death remember our life on earth'. Cf. (1924) I cxlvii sq. and see also Themistius, Simplicius, Rodier, and Tricot *ad loc.*; cf. finally Rist 515. This interpretation presupposes, however, that Aristotle would be talking about a personal immortality, which is out of the question (see above). Moreover, the suggestion that an imperishable mind would have memory of a prior 'earthly existence' makes little sense in Aristotle. For, even if this mind had memory, the knowledge of life in material circumstances would not be able to contribute to the eternal cognition of the eternal which characterizes this mind. For this reason Krämer's view (1964) 163-173 that the νοῦς of God thinks the world seems to me equally untenable.

⁴⁹ *De an.* III 5, 430^a24-25.

⁵⁰ Nuyens speaks of a 'contradiction latente' with *De an.* III 4, where the potential and receptive mind is called ἀπαθής (429^a15) and χωριστός (429^b5); cf. Barbotin 158. In my opinion this contradiction is no problem in view of the argumentation presented.

Brentano 208 and Rolfes 184 identify ὁ παθητικός νοῦς with the φαντασία. Hicks 508-509 has the subtler interpretation: 'The man cannot think without mental images, which

imply sense and imagination, and these powers of the soul are conditioned by the body. The dissolution of the compound substance, the man himself, puts an end to the processes of sensation and imagination, and to the thinking of the man, in so far as mental images are necessary thereto'. Precisely the human mind-in-action is perishable, therefore, whereas this mind, inasmuch as it is a pure potentiality, can still be seen as the correlate of the mind (of God) which exists separately from the body and is imperishable. On this correlation, see Cassirer 181. See further ch. 9, §13.

⁵¹ *De an.* III 8, 432^a3-6; ^a8-9: ἀνάγκη ἅμα φάντασμα τι θεωρεῖν.; cf. I 1, 403^a5-10.

The phrase ἐν τοῖς εἰδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστι (432^a4-5) must be seen against the background of III 4, 429^b21-22): ὅλως ὡς χωριστὰ τὰ πράγματα τῆς ὕλης, οὕτω καὶ τὰ περὶ τὸν νοῦν. In the material world the noetic cannot exist separately from the sensible, neither on the side of the object, nor on the side of the subject. Nuyens 293 writes in this context: 'Les νοητά sont présents dans les objets de la connaissance sensible; non en acte toutefois, mais seulement en puissance', and he refers to III 4, 430^a6-7. This does not apply *here*, however. It would assume that man can raise himself to the *purely* noetic. The end of III 8 shows that this is not Aristotle's intention. He says there: τὰ δὲ πρῶτα νοήματα τί διοίσει τοῦ μὴ φαντάσματα εἶναι; (432^a12-13). If one adopts Nuyens's interpretation of 432^a4-5, this question no longer makes sense.

⁵² *De an.* III 7, 431^b18-19: ὄντα αὐτὸν μὴ κεχωρισμένον μεγέθους. On the relation between this phrase and 429^b5 (ὁ δὲ χωριστός), see n. 50 and ch. 9, §13.

⁵³ *De an.* III 8, 432^a3-4: ἐπεὶ δὲ οὐδὲ πρᾶγμα οὐθὲν ἐστι παρὰ τὰ μεγέθη, ὡς δοκεῖ, τὰ αἰσθητὰ κεχωρισμένον.

Hicks 545 *ad loc.* writes: 'the judgement of Simpl. was no doubt biased by philosophic anxiety to vindicate the existence of κεχωρισμένον τι τοῦ μεγέθους (431^b18 sq.). He overlooked the qualification ὡς δοκεῖ, by use of which Aristotle abstains from committing himself'. Both the interpretation of Simplicius and that of Hicks cannot be maintained.

The meaning of τὸ πρᾶγμα is: that which is object of human contemplation or preoccupation, or is at least thought in relation hereto, or else human action itself; see Bonitz *ad* πρᾶγμα. Τὸ πρᾶγμα is therefore not equivalent to τὸ ὄν. Whether immaterial things exist is thus not at issue here. Nor would the remark as interpreted by Hicks be logical after the preceding chapters on νοῦς.

Cf. III 7, 431^b17-19: ἄρα δ' ἐνδέχεται τῶν κεχωρισμένων τι νοεῖν ὄντα αὐτὸν μὴ κεχωρισμένον μεγέθους, ἢ οὐ, σκεπτέον ὕστερον.; see also *De mem.* 1, 450^a7-9. The answer to the question raised at the end of III 7 may lie in the passage cited from III 8.

Finally, ὡς δοκεῖ (432^a34), it seems to me, merely indicates that Aristotle makes the remark with some reservations. Perhaps he feels that he has not gained a definitive insight into the matter, yet wishes to offer his views.

⁵⁴ See *Met.* Lambda 6 and also the argumentation at the end of *De an.* III 4 and that of III 5 as a whole.

⁵⁵ *De an.* III 5, 430^a25: καὶ ἄνευ τούτου οὐθὲν νοεῖ.

Various commentators make the causative mind subject of the sentence and interpret: ἄνευ τοῦ παθητικοῦ νοῦ; See the survey of views in Hicks 509 *ad loc.*; cf. also e.g. Cassirer 178; Nuyens 309; Ross (1961) 48 and Tricot (1977) *ad loc.* But this interpretation ignores the fact that the causative mind in III 5 is called τῇ οὐσίᾳ ἐνέργεια (430^a18), which ἐνέργεια should be understood as νοεῖν (see 430^a22). In this context Guthrie says somewhat dramatically: 'If they are right, we shall have to give up all hope of understanding not only Aristotle's explanation of thought, but his whole philosophy' (p. 322).

Hicks himself holds a different view (pp. 509-510 *ad loc.*): 'and without the active intellect no thinking is possible'; cf., in the same vein, Smith's translation (1931) and Theiler's (1959); see also Guthrie 321-322.

Chapter 8: The human soul and the divine mind

¹ *E.N.* X 7, 1177^b28: ἡ θεῖόν τι ἐν αὐτῷ ὑπάρχει.; cf. ^b30-31: εἰ δὴ θεῖον ὁ νοῦς πρὸς τὸν ἄνθρωπον, καὶ ὁ κατὰ τοῦτον βίος θεῖος πρὸς τὸν ἀνθρώπινον βίον.; ^b34: τὸ κράτιστον τῶν ἐν

αὐτῷ.; 1178^a2-3: δόξειε δ' ἂν καὶ εἶναι ἕκαστος τοῦτο, εἴπερ τὸ κύριον καὶ ἄμεινον.; ^a7: εἴπερ τοῦτο μάλιστα ἀνθρώπος.

² Cf. *De an.* III 8, 432^a12-14: τὰ δὲ πρῶτα νοήματα τί διοίσει τοῦ μὴ φαντάσματα εἶναι; ἢ οὐδὲ τᾶλλα φαντάσματα, ἀλλ' οὐκ ἄνευ φαντασμάτων. On this passage, see Rodier 526 and Hicks 547-548. For τᾶλλα, cf. III 4, 429^b29: τᾶλλα; ^b27: τοῖς ἄλλοις; ^b21-22: τὰ πράγματα. Aristotle seems to be consistently avoiding the use of the term τὰ νοητά (430^a3) here. In this way he is able to indicate the object-side of intellective cognition without presuming the noetic nature of the cognitive object—that is precisely the problem being discussed here.

³ Cf. Barbotin 215: 'concluons que le dilemme "immanence ou transcendance" ((...)) paraît être, historiquement, un faux problème'. At pp. 216-232 he writes extensively on the role played by the μέθεξις τοῦ θείου in Aristotle. He lists the texts in which participation is discussed and mentions other literature. But his interpretation is unsatisfactory in the way that it specifies (apparently following Theophrastus) the relation between the human mind and the mind of God. See ch. 9, §3.

Rist 505-506 confirms the conclusion reached by Barbotin, but does not shed more light on the issue.

⁴ *De gen. an.* II 3, 736^b14-15: Πάσας γὰρ ((ψυχῆς)) ἀναγκαῖον δυνάμει πρότερον ἔχειν ἢ ἐνεργεία.

⁵ *De gen. an.* II 3, 736^b21-25: "Ὅσων γὰρ ἐστὶν ἀρχῶν ἡ ἐνέργεια σωματική, δηλὸν ὅτι ταῦτας ἄνευ σώματος ἀδύνατον ὑπάρχειν, οἷον βαδίζειν ἄνευ ποδῶν. ὥστε καὶ θύραθεν εἰσιέναι ἀδύνατον.

⁶ *De gen. an.* II 3, 736^b26-27: οὗτ' ἐν σώματι εἰσιέναι. τὸ γὰρ σπέρμα περίττωμα μεταβαλλούσης τῆς τροφῆς ἐστίν.

The gist of the passage is that the sensitive soul, though entering matter via sperm, does not exist as an actuality in the sperm and therefore does not enter as an actuality from outside either. Thus 'to enter from outside' goes together with 'pre-existing as an actuality', that is, if one means 'to enter from outside as an actuality'. Cf. Couloubaritsis (1980) B 170-171.

⁷ *De gen. an.* II 3, 736^b27-28: Λείπεται δὴ τὸν νοῦν μόνον θύραθεν ἐπεισιέναι καὶ θεῖον εἶναι μόνον.

On II 3, 736^b12-29, see Nuyens 37-40 and 314-315. With regard to 737^a7-12 (Τὸ δὲ τῆς γονῆς σῶμα, ἐν ᾧ συναπέρχεται τὸ τῆς ψυχικῆς ἀρχῆς (τὸ μὲν χωριστὸν ἐν σώματος, ὅσοις ἐμπεριλαμβάνεται τι θεῖον - τοιοῦτος δ' ἐστὶν ὁ καλούμενος νοῦς - τὸ δ' ἀχώριστον) τοῦτο τὸ σῶμα τῆς γονῆς διαλύεται καὶ πνευματοῦται, φύσιν ἔχον ὑγρὰν καὶ ὑδατώδη), I follow the interpretation of Nuyens 39; cf. Barbotin 195 n. 2. Cf. on the other hand Moraux (1955) 269, esp. n. 43, and Lefèvre 277. But Lefèvre also says: 'le principe psychique transmis — à un stade encore germinal — par le père ne peut être en nous intellect humain, âme intellectuelle digne de ce nom, que par l'inclusion — à un moment et sous une forme que le Stagiritte nous laisse conjecturer — de la réalité qui échappé aux prises du devenir' (p. 277); and 'il est impossible d'attribuer à l'acte générateur la transmission de l'intellect lui-même, considéré en son essence' (p. 276). To say that the potential mind enters matter via the sperm is not in itself incorrect, but is rather meaningless, since this mind is a pure potentiality and does not become an actuality through its union with the body. Aristotle says nothing about the arising of a possible disposition to possess mind. Moreover, he states explicitly that every kind of soul, including the intellective soul, is preceded by a state of potentiality (736^b12-15). The problem with which he is concerned, therefore, is the way in which this potentiality becomes actuality. Cf. Couloubaritsis (1980) B 168 and 171, who gives a different interpretation. But he too writes (p. 190): 'cette transmission ((of the potential mind)) dans et par le sperme masculin ((...)) n'est pas à proprement parler la constitution de cette faculté'.

⁸ *De gen. an.* II 3, 736^b28-29: οὐθὲν γὰρ αὐτοῦ τῇ ἐνεργείᾳ κοινωνεῖ σωματικῇ ἐνέργειᾳ.; cf. *De an.* II 1, 413^a7: διὰ τὸ μηθένος εἶναι σώματος ἐντελεχείας.

⁹ *De an.* I 4, 408^b18-19: ὁ δὲ νοῦς ἔοικεν ἐγγίνεσθαι οὐσία τις οὐσα.

¹⁰ Cf. *De an.* III 8, 432^a12-14, cited in n. 2. Couloubaritsis (1980) B defends the proposition that the νοῦς θύραθεν is a concept by which Aristotle denotes the νοητά that are

known by the human mind. Even if this proposition is sound (but the arguments which Couloubaritsis advances are not wholly convincing), the νοῦς θύραθεν cannot be identified with the ποιητικόν of *De an.* III 5, as Couloubaritsis (pp. 185, 188) does. For the νοητά known by man merely *have* νοῦς, whereas the ποιητικόν in question *is* νοῦς. It is furthermore not clear why Couloubaritsis (p. 181) links up ὅταν δύνῃται ἐνεργεῖν δι' αὐτοῦ (*De an.* III 4, 429^b7) and αὐτὸν καθ' αὐτὸν εἰσιέναι (*De gen. an.* II 3, 736^b25).

¹¹ See above pp. 96-97. Cf. Couloubaritsis (1980) B 187. He writes: '(((...)) nous incite à conclure que l'expression νοῦς θύραθεν désigne "l'ensemble des εἰδη venant du dehors", ou si l'on veut encore, "l'ensemble des intelligibles (νοητά) venant du dehors". Ce sont ces εἰδη, les intelligibles, qui actualisent l'intellect en puissance et rendent possible le penser (τὸ νοεῖν)'. The latter statement seems right to me. But the former would require that the νοητά which man knows are immaterial, just like the νοῦς θύραθεν. But this is not true of the physical things which are the object of human cognition.

Chapter 9: Controversies. The history of the interpretation of *De anima* III 4 and 5.

¹ Cf. the surveys at Brentano, Hamelin (1953), Hicks, Kurfess, Grabmann (1936), Ross (1961), and Moraux (1978). See also e.g. Gätje and Moraux (1973).

² The fragments of Theophrastus' work which are relevant to Aristotle's doctrine of the mind are found in Hicks 589-596 and in Barbotin 245-273.

³ Themistius 108,1-6 (Hicks f. 1; Barbotin f. Ib): Πῶς δέ ποτε γίνεται τὰ νοητὰ καὶ τί τὸ πάσχειν (ὕπ') αὐτῶν; Δεῖ γάρ, εἴπερ εἰς ἐνέργειαν ἦξει καθάπερ ἡ αἰσθησις. Ἀσωμάτω δὲ ὑπ' ἀσωμάτου τί τὸ πάθος ἢ ποία μεταβολή; Καὶ πότερον ἂν' ἐκείνου ἢ ἀρχῇ ἢ ἂν' αὐτοῦ; Τῷ μὲν γὰρ πάσχειν, ἂν' ἐκείνου δόξειεν ἂν (οὐδὲν γὰρ ἂν' ἐαυτοῦ τῶν ἐν πάθει). τῷ δὲ ἀρχὴν πάντων εἶναι καὶ ἐπ' αὐτῷ τὸ νοεῖν, καὶ μὴ ὥσπερ ταῖς αἰσθήσεσιν, ἂν' αὐτοῦ.

Cf. Priscianus 29,12-15 (Hicks f. 6; Barbotin f. VI): Ἐπεὶ τὸ ὕψ' ἑτέρου κινουῦντος τὴν ἐνέργειαν εἶναι τοῦ νοῦ καὶ ἄλλως ἄτοπον, καὶ πρότερον τι ποιεῖν ἐστὶν ἕτερον τοῦ νοῦ, καὶ οὐκ ἐπ' ἐαυτῷ τὸ νοεῖν, εἰ μὴ τις ἄλλος ὁ κινῶν νοῦς.

τὸ ἕτερον is here the object of knowledge; cf. Barbotin 119 n. 2 and 209-212.

⁴ *De an.* II 5, 417^b24-25: διὸ νοῆσαι μὲν ἐπ' αὐτῷ, ὅποταν βούληται, αἰσθάνεσθαι δ' οὐκ ἐπ' αὐτῷ.

⁵ See *De an.* III 4, 429^b5-9.

⁶ *An. Post.* I 33, 88^b36: λέγω γὰρ νοῦν ἀρχὴν ἐπιστήμης.; see also II 19, 100^b15 and cf. I 2, 72^b23-25.

⁷ *An. Post.* II 19, 100^a13-14: ἡ δὲ ψυχὴ ὑπάρχει τοιαύτη οὖσα οἷα δύνασθαι πάσχειν τοῦτο.

⁸ *De an.* II 12, 424^b2: τοιαύτην ἀρχὴν οἷαν τὰ εἰδη δέχεσθαι τῶν αἰσθητῶν. Cf. III 2, 427^a14-16.

⁹ See Barbotin 117-122.

¹⁰ Themistius 108,24 (Hicks f. 12; Barbotin f. XII): μικτὸν γὰρ πῶς ὁ νοῦς ἐκ τε τοῦ ποιητικοῦ καὶ τοῦ δυνάμει.

¹¹ Themistius 107,32 (Hicks f. 1; Barbotin f. Ia): ἔξωθεν ὦν. The potential mind is not specifically concerned here, as Themistius' introduction of the quotation might suggest (107,31). See also 107,35-36: τὸ ἔξωθεν. Themistius has duly seen that ἔξωθεν and συμφυῆς in the quotation which he takes from Theophrastus are not mutually exclusive; cf. 108,13-14. See finally Simplicius 965,4 (Hicks f. 13; Barbotin f. XIII): ἔξωθεν ἐπεισιῶν.; cf. Priscianus 29,15 (Hicks f. 6; Barbotin f. VI): εἰ μὴ τις ἄλλος ὁ κινῶν νοῦς, a possibility which is not ruled out by Theophrastus in this passage (cf. Hicks 595).

¹² Themistius 107,36-108,1 (Hicks f. 1; Barbotin f. Ia): ἐν τῇ πρώτῃ γενέσει συμπεριλαμβανόμενον.; cf. 108,27 (Hicks f. 12; Barbotin f. XII): ἐνυπάρχων.

¹³ Priscianus 30,22-31 (Hicks f. 7; Barbotin f. VIIb). Cf. Priscianus 29,22-23 (Hicks f. 7; Barbotin f. VIIa): ἄρα οὖν, ὅταν μὴ νοῇ, μὴ ὦν τὰ πράγματα οὐδὲ νοῦς ἐστίν. See also 26,1-6 (Hicks f. 1; Barbotin f. Ic).

¹⁴ Themistius 108,27-28 (Hicks f. 12; Barbotin f. XII): ἐνυπάρχων δ' οὖν διὰ τί οὐκ αἰεὶ; ἡ διὰ τί λήθη καὶ ἀπάτη καὶ ψευδός; ἡ διὰ τὴν μῆξιν.

¹⁵ Priscianus 37,24-30 (Hicks f. 11; Barbotin f. XI; with contextus).

¹⁶ Barbotin 148-150 and 83-84. See on the other hand the caution displayed by Kurfess 9.

¹⁷ A further complication in Barbotin is the rather obscure way in which, without clearly following the Aristotelian text, he speaks about (pp. 83-85 and 148-150) 'réalités engagées dans la matière', 'objets mathématiques', 'abstractions mathématiques', and 'intelligibles au sens plénier du mot'.

¹⁸ See n. 12. Cf. Barbotin 213: 'l'Erésien conçoit le ποιητικόν comme inné à l'individu'; 200; 'qui fait partie intégrante du composé humain'; 215: 'présent dans l'homme'. Some of Barbotin's other formulations go perhaps beyond what can be justified by the fragments of Theophrastus; p. 208: '((l'intellect actif)) demeure intimement mêlé au δυνάμει νοῦς, à titre de co-principe intrinsèque de l'activité intellectuelle'.

¹⁹ Alexander 88,23-89,21.

²⁰ See ch. 7 n. 15.

²¹ *De an.* III 5, 430^a23: τοῦτο μόνον ἀθάνατον.

²² Themistius 103,9-13.

²³ Themistius 103,13-15.

²⁴ Cf. Ross (1924) I cxlviii.

²⁵ Themistius 103,20-36. Cf. *De an.* III 5, 430^a15 and Plato *Resp.* VI 508 b-c. But in 507e-508a Plato uses the terms τὸ φῶς and ἡ ἥλιος indiscriminately. Simplicius 129,14 *ad De an.* II 7 speaks of τὸ ἡλιακὸν φῶς. See De Vogel 225-226.

²⁶ *De an.* III 5, 430^a16-17.

²⁷ *De an.* III 5, 430^a13-14.

²⁸ See ch. 7 for a discussion of ἐν τῇ ψυχῇ (430^a13).

²⁹ Guthrie 327-330. He discusses Trendelenburg 404, Ross, Hamlyn (1968) 140-142. Cassirer 180, Rist (Guthrie is very detailed here), and Nuyens 296-312.

³⁰ Ch. 6 n. 15: on the one hand ἐνυλα εἶδη, on the other hand ἄνυλα εἶδη. See Alexander 87 and 108.

³¹ Cf. also Plotinus *Enn.* IV 4 (28) 23; IV 6 (41) 3; IV 7 (2) 8. In connection with this last Ennead Bréhier observes in his *Notice* (p. 182) that Plotinus derives a great deal from Alexander. Merlan 39 also indicates the possibility of interpreting Plotinus through Alexander. See also the above-cited texts from Alexander and Themistius; and see e.g. Philoponus 525,11 sqq.

³² Alexander 84,19-20: ποιεῖ γὰρ ὁ νοῦς καὶ τὰ αἰσθητὰ αὐτῶ νοητὰ χωρίζων αὐτὰ τῆς ὕλης.; 108, 3-5: τὰ μὲν γὰρ ἐνυλα εἶδη ὑπὸ τοῦ νοῦ νοητὰ γίνονται, ὄντα δυνάμει νοητά. χωρίζων γὰρ αὐτὰ τῆς ὕλης ὁ νοῦς, μεθ' ἧς ἐστὶν αὐτοῖς τὸ εἶναι, ἐνεργείᾳ νοητὰ αὐτὸς αὐτὰ ποιεῖ.

³³ Alexander 83,11-19; 11-13: ἧτις περιληψὶς τε καὶ διὰ τῆς τῶν καθ' ἕκαστα αἰσθητῶν ὁμοιότητος τοῦ καθόλου λῆψις νόησις ἐστίν. ἡ γὰρ τῶν ὁμοίων σύνθεσις ἔργον ἤδη νοῦ.; 14-15: ἡ νόησις λῆψις τῶν εἰδῶν ἐστὶ χωρὶς ὕλης.

³⁴ Alexander 88,24-89,7: καὶ τὸ μάλιστα δὴ καὶ τῇ αὐτοῦ φύσει νοητὸν εὐλόγως αἵτιον καὶ τῆς τῶν ἄλλων νοήσεως. τοιοῦτον δὲ ὅν εἴη ἂν ὁ ποιητικὸς νοῦς.

³⁵ Alexander 108,19-22: τοῦτο δὴ τὸ νοητὸν τε τῇ αὐτοῦ φύσει καὶ κατ' ἐνέργειαν νοῦς, αἵτιον γινόμενον τῶ ὕλικῳ νῶ τοῦ κατὰ τὴν πρὸς τὸ τοιοῦτο εἶδος ἀναφορὰν χωρίζειν τε καὶ τῶν ἐνύλων εἰδῶν ἕκαστον καὶ ποιεῖν νοητὸν αὐτό, θύραθεν ἐστὶ λεγόμενος νοῦς ὁ ποιητικὸς ((...)). Cf. 88,6-7: ὅταν ταῦτα τὰ εἶδη νοῇ, ὁ αὐτὸς ἐκείνοις τότε γίνεται.

Morau (1978) 303 translates 108,19-22 as follows: 'Ainsi donc, cet être intelligible de par sa propre nature et intellect en acte devient, pour l'intellect matériel, la cause qui le porte à séparer, imiter et penser chaque forme intelligible, en se référant à son rapport avec la forme du genre qu'on a dit'. And he writes (p. 302): 'la causalité du νοῦς ποιητικὸς est donc présentée assez différemment dans les deux traités: dans le *De anima* ((of Alexander)), il est cause d'intelligibilité pour les formes engagées dans la matière, rendant ainsi possible leur saisie par l'intellect pensant ((see 88,24-89,7; n. 34)). Dans le *De intellectu*, il apparaît la cause donnant à l'intellect matériel son plein développement de faculté ((see 108,19-22, cited above)).

But Aristotle also speaks in two ways about the action of the causative mind; see above, ch. 7. Moreover, Alexander already introduces the abstraction-theory in his *De anima* and writes immediately prior to 88,24-89,7: καὶ ἐπεὶ ἐστὶν ὕλικός τις νοῦς, εἶναι τινα

δεῖ καὶ ποιητικὸν νοῦν, ὃς αἴτιος τῆς ἕξεως τῆς τοῦ ὕλικου νοῦ γίνεται (88,23-24). Where Alexander discusses the action of God's mind in relation to material things, he seems to be merely paraphrasing the Aristotelian text. He does not return to this in his interpretations and emphasizes both in the *De anima* and in the *De intellectu* the abstracting potential of the human mind on the one hand, and the direct relation between the human mind and an immaterial cause on the other hand (cf. *De an.* 90,10-91,6, perhaps somewhat neglected in Moraux's study (1978) 300)..

³⁶ Alexander 110,10-13 and 18-20.

³⁷ Alexander 110,4 sqq.

³⁸ See below, §7.

³⁹ Cf. Aristotle *De an.* II 5, 417^a9-20 and 418^a3-6; III 4, 429^a15-18 and 429^b29-31. Cf. on the other hand Alexander 111,17-19: καὶ γὰρ εἰ ἅμα χωρίζεται καὶ λαμβάνει, ἀλλὰ τὸ χωρίζειν προεπινοεῖται. τοῦτο γὰρ ἐστὶν αὐτῷ τὸ ληπτικῶ εἶναι τοῦ εἰδούς.

⁴⁰ See n. 33.

⁴¹ *De an.* III 6, 430^a26-28; cf. *Met.* Epsilon 4.

⁴² Alexander 84,4-6.

⁴³ Alexander III,4-15.

⁴⁴ Alexander 90,19-91,4; 90,23-91,4: ὁ οὖν νοούμενος ἄφθαρτος ἐν ἡμῖν οὗτός ἐστιν, ((...)) ἀλλ' οὐχ ἡ δύναμις τῆς ἐν ἡμῖν ψυχῆς, οὐδὲ ἡ ἕξις, καθ' ἣν ἔξιν ὁ δυνάμει νοῦς τὰ τε ἄλλα καὶ τοῦτον νοεῖ.

⁴⁵ See Alexander 110,22-24: θύραθεν ἐστὶ λεγόμενος νοῦς ὁ ποιητικός, οὐκ ὦν μόριον καὶ δυνάμεις τις τῆς ἡμέτερας ψυχῆς, ἀλλ' ἔξωθεν γινόμενος ἐν ἡμῖν, ὅταν αὐτὸν νοῶμεν.; and 109,3-4: οὗτός δὲ νοῦς, ὦν καὶ πρὸ τοῦ νοεῖσθαι, εἰκότως ὅταν νοηθῇ, θύραθεν τε ἐστὶ καὶ λέγεται.

Cf. Moraux (1978) 301: 'l'immortalité acquise en pensant l'intellect divin ne change rien à la condition mortelle de notre faculté'. Cf. p. 304 and (1942) 95: 'Comme il insiste sur le caractère éternel de l'objet plutôt que sur l'éternité acquise par la faculté qui le pense, l'immortalité personnelle devient l'immortalité du concept de Dieu en l'homme, et non l'immortalité de la faculté intellectuelle en tant que sujet connaissant'. See also (1973) 246: 'Jahrhunderte später ((than Dikaiarchos)) wird ein Alexander von Aphrodisias trotz seiner naturalistischen Orientierung und trotz seiner unzweifelhaften Ansicht von der Sterblichkeit der Seele sich immer noch zu einem in den Menschen von auszen her gekommen, unsterblichen göttlichen Nous bekennen'.

I maintain that Alexander's views do not differ from Aristotle's on this point and that the problem envisaged by Moraux is solved by a careful analysis of the way in which, according to Aristotle, the human soul participates in the mind of God.

⁴⁶ See above, §3.

⁴⁷ But Alexander never calls the abstracting potential of the human soul ποιητικός νοῦς.

⁴⁸ Themistius 98,18-19: ((...)) τελειοῦται ((...)) ὑφ' ἐτέρου.

⁴⁹ Themistius 98,18-19: ὃς ἐκεῖνω συμπλακεῖς τῷ δυνάμει.; 99,13-15: οὐ γὰρ ἔξωθεν τῆς ὕλης ἡ τέχνη, ((...)), ἀλλ' ἐνδύεται ὅλῳ τῷ δυνάμει νῶ ὁ ποιητικός.; 99,17-18: οὕτω γὰρ καὶ ὁ κατ' ἐνέργειαν νοῦς τῷ δυνάμει νῶ προσγενόμενος εἰς τε γίνεται μετ' αὐτοῦ.

⁵⁰ Themistius 99,22-23: ἐπ' αὐτῷ γὰρ ὅτε βούλεται νοήματα περιλαβεῖν καὶ μορφώσαι.; cf. 99,13. And 100,18-20: καὶ ἐγὼ μὲν ὁ συγκείμενος νοῦς ἐκ τοῦ δυνάμει καὶ τοῦ ἐνεργεία, τὸ δὲ ἐμοὶ εἶναι ἐκ τοῦ ἐνεργεία ἐστίν.; 100,37-101,1: ἡμεῖς οὖν ὁ ποιητικός νοῦς. But this does not seem to rule out a simultaneous transcendence of this νοῦς. See 103,36-104,3; 36-37: εἰ δὲ εἰς ἓνα ποιητικὸν νοῦν ἅπαντες ἀναγόμεθα οἱ συγκείμενοι ἐκ τοῦ δυνάμει καὶ ἐνεργεία, ((...)); 104,2-3: ((...)) εἰ μὴ τις ἦν εἰς νοῦς, οὐ πάντες ἔκoinωνοῦμεν.

⁵¹ Verbeke (1957) L thinks that in Themistius the causative mind is 'constitutif formel du moi' and in doing so clearly follows the formulations of Themistius himself. Yet he assigns an independence to this immanent principle which the principle does not perhaps possess in the eyes of the Greek commentator; see §8 of this chapter. Nardi and Ballériaux, whose interpretations Verbeke rejects here (pp. XLIX-L), are aware that the causative principle, inasmuch as it is immanent, could only be the effect of the transcendent mind, so that man does not possess the principle independently. Verbeke fails to appreciate the subtlety of the problems concerning participation; cf. (1957) LVII-LVIII. Further on (pp. LVIII-LIX) he seems to ignore the transcendence of the causative mind completely.

⁵² Themistius 103,32-104,3.

⁵³ Themistius 102,30-103,19; 103,13-14: ἐπὶ μέντοι τῆς ψυχῆς τῆς ἀνθρωπίνης καὶ τῶν περὶ ταύτην δυνάμεων (...).

Again a simultaneous transcendence of this mind is not ruled out. But such a transcendence is not the theme of *De an.* III 5, according to Themistius. On the basis of these texts it is therefore difficult to decide whether Themistius, more than Alexander, found a notion of personal immortality in Aristotle.

⁵⁴ See also above, §4.

⁵⁵ Themistius 103,20-32.

⁵⁶ Themistius 103,32-34: ἡ ὁ μὲν πρῶτως ἐλλάμπων εἷς. οἱ δὲ ἐλλαμπόμενοι καὶ ἐλλάμποντες πλείους ὥσπερ τὸ φῶς. ὁ μὲν γὰρ ἥλιος εἷς, τὸ δὲ φῶς εἰποῖς ἄν τρόπον τινὰ μερίζεσθαι εἰς τὰς ὀψεις.

Cf. Verbeke (1957) XLIII-XLIV. According to Kurfess 29 and Merlan 49, the passage on the plurality of the causative mind was inserted at a later date. Cf. on the other hand Moraux (1978) 312-313.

⁵⁷ *De an.* III 5, 430^a24-25: ὁ δὲ παθητικὸς νοῦς φθαρτός. Themistius 101,5 sqq.

⁵⁸ Alexander 90,11-20.

⁵⁹ Volume XV of the *Commentaria in Aristotelem Graeca*, published by Hayduck, only contains Philoponus' commentary on books I and II of Aristotle's *De anima*. The commentary on book III found in this volume is ascribed to Stephanus of Alexandria. See Hayduck p.V; Grabmann (1929) 10. Fragments of a commentary by Philoponus on (a part of) *De anima* III have been found in Sophonias; see Verbeke (1966) CXVII. But there is a Latin version of Philoponus' commentary on *De an.* III 4-9; see Verbeke (1966). One may add that the views of pseudo-Philoponus and Philoponus coincide on the points we shall deal with.

⁶⁰ Philoponus 539,25-39; cf. 537,29-33; 32-33: ἡ γὰρ πρώτη αἰτία αὐτὴν τὴν οὐσίαν τῶν ὄντων παράγει, καὶ οὐδὲν ἐστὶν ὃ οὐκ αὐτὴ ἐποίησε.

⁶¹ *Met.* Lambda 7, 1072^a26-b4.

⁶² Cf. Philoponus 539,37-39. The mind of the angels, which is discussed time and again here (535,38; 536,13; etc.), is another element not found in Aristotle.

⁶³ Verbeke (1966) LIX-LX.

⁶⁴ Verbeke (1966) LX-LXI.

⁶⁵ Plato *Sophistes* 230b-e; Aristotle *Met.* Gamma 4.

⁶⁶ Philoponus 540,19-32; cf. Verbeke (1966) LXVI.

⁶⁷ Cf. Kurfess 35: 'Die Erklärung des Simplicius führt in ihrer ganzen Ausprägung offenbar vom genuinen Aristoteles ab; aktuelle Bedeutung hat sie höchstens noch in Einzelpunkten'; and p. 32: 'Er will die arist. Nuslehre von der Emanation des Niederen aus dem Höheren begreiflich machen'.

⁶⁸ Sophonias 136,8-24; cf. Kurfess 38-39.

⁶⁹ Cf. Merlan (1969).

⁷⁰ Jolivet 1-6. Cf. Alexander 106,19 sqq.

⁷¹ Cf. Verbeke (1968) 65* on Avicenna: 'Avicenne affirme à plusieurs reprises que les formes intelligibles émanent de l'intellect agent dans l'âme humaine'.

⁷² Walzer 9.

⁷³ Brentano 10; Verbeke (1968) 64* n. 226.

⁷⁴ Cf. *Met.* Lambda 6, 1071^b12-22.

⁷⁵ Walzer 177-178. See §12.

⁷⁶ Brentano 11 n. 30 quotes Avicenna: 'Cogitationes enim et considerationes motus sunt aptantes animam ad recipiendum emanationem'. And Verbeke (1968) 65* writes: 'Cette réception se fait à la suite d'une recherche active de la part de l'âme'; p. 68*: 'Apprendre, c'est donc rechercher l'aptitude parfaite de s'unir à l'intellect agent, source des intelligibles'. See also e.g. Rahman 92 on Al-Farabi, Verbeke (1968) 69* on Avicenna, Brentano 15 on Averroes. Hamelin (1953) 64 writes on Averroes: 'L'imagination, l'ensemble des images est, en un sens, l'acte premier de l'intellect'. This cannot be traced back to Aristotle.

⁷⁷ Cf. *E.N.* VI 9, 1142^a11-20 and VI 11, 1143^b11-14.

⁷⁸ *Met.* Alpha 1, 891^a1-12.

⁷⁹ Plato *Resp.* VI and VII: through διάνοια one arrives at νοῦς. Plotinus *Enn.* I 3 (20) 5; IV 4 (28) 12.

⁸⁰ See Brentano 16-17. On the one hand Averroes speaks of an 'intellectus, qui in nobis existit' (p. 16, n. 44), which mind has two parts: 'una quae recipit, alia quae agit' (p. 16 n. 43); on the other hand he says '...possumus opinari intellectum materialem esse unicum in cunctis individuis' (p. 17 n. 46).

⁸¹ Thomas strongly opposed the first view in particular. Brentano 17 n. 46 calls it 'eine ganz lächerliche Behauptung'.

⁸² Cf. the severe judgement passed by Hicks lxvi: 'he ((Aristotle)) was not a Moslem mystic nor a Christian theologian'. Hicks fails to recognize that on this point Averroes may equally be drawing on the Neoplatonic tradition.

⁸³ *De an.* III 4, 429^a24-25; ^a29; ^b4-5.

⁸⁴ *De an.* III 5, 430^a17-18.

⁸⁵ *Met.* Lambda 8, 107^a31-38.

⁸⁶ *Met.* Lambda 6, 1071^b12-22; cf. Lambda 9.

⁸⁷ *De an.* III 4, 429^a10; ^a23.

⁸⁸ *De an.* III 4, 429^b10-22.

⁸⁹ *De an.* III 4, 430^a2-5.

⁹⁰ *De an.* III 4, 430^a5-8.

⁹¹ *De an.* III 5, 430^a17-19.

⁹² *De an.* III 5, 430^a23.

⁹³ *De an.* III 5, 430^a22-23: χωρισθεὶς δ' ἐστὶ μόνον τοῦθ' ὅπερ ἐστὶ.

⁹⁴ *De an.* III 5, 430^a24-25: ὁ δὲ παθητικὸς νοῦς φθαρτός.

⁹⁵ See above, §3.

⁹⁶ Cf. Brentano 11 n. 30. He cites Avicenna: 'Cum enim virtus rationalis considerat singula, quae sunt in imaginatione, et illuminatur luce intelligentiae agentis in nos (...), fiunt nuda a materia et ab ejus appenditiis et imprimuntur in anima rationali'. In Avicenna this abstracting action is at the same time the emanation of the supra-human mind in the human mind: '(...)' quia ex consideratione ((as mentioned in the previous quotation)) coaptatur anima, ut emanet in eam intelligentia agente abstractio' (p. 11 n. 30). On p. 16 n. 44 Brentano cites Averroes: 'cum intellectus, qui in nobis existit, duas habet actiones, (...), quarum una est de genere passionis et illa quidem est ipsa intelligere, altera vero est de genere actionis, nempe quae est abstrahere formas easque denudare a materiis, quod nihil aliud est, quam facere eas intelligibiles actu'.

⁹⁷ Cf. the formulation which Hicks lxvi uses in this context: 'In scholastic language each ((both the potential and the causative mind)) is *forma assistens, superveniens* and not *forma dans esse homini*'.

⁹⁸ See *E.N.* X 7, 1178^a2-8. Cf. Themistius, above §7 and §8.

⁹⁹ Gilson (1929) 120 speaks in this context of 'le plus grand événement philosophique de tout le moyen âge occidental'.

¹⁰⁰ Thomas *comm.* L.III, l. X, no 736: ((Aristotle)) 'expresse dixit, has differentias duas, scil. intellectum agentem et intellectum possibilem, esse in anima'.

¹⁰¹ Thomas *De unitate* 3,218: 'secundum primam ejus generationem'.

¹⁰² Thomas *S. Th.* I q. 79, a. 4. 'ab illo intellectu superiori participatam'; 'aliqua virtus derivata a superiori intellectu'.

¹⁰³ Thomas *S. Th.* I q. 12, a. 11: 'utrum aliquis in hac vita possit videre Deum per essentiam'; I q. 88, a. 1: 'Utrum anima humana, secundum statum vitae praesentis, possit intelligere substantias immateriales per seipsas'. Thomas answers both questions in the negative.

Cf. I q. 12, a. 12: '(...)' quod naturalis nostra cognitio a sensu principium sumit'; and I q. 88, a. 1, at the end: 'Uterque ergo intellectus se extendit, secundum statum vitae praesentis, ad materialia sola'.

¹⁰⁴ Gilson (1926) 46 sqq. Gilson discusses in particular Gundissalinus, Guillaume d'Auvergne, and Roger Bacon. In Alexander of Hales, Jean de la Rochelle, and Mathieu d'Aigueperse a theory of illumination is retained beside the view that the human mind has its own *intellectus agens*.

¹⁰⁵ Thomas *De spir. creat.* a. 10, ad 8: 'non multem aut refert dicere, quod ipsa intelligibilia participantur a Deo, vel quod lumen faciens intelligibilia'. Cf. Gilson (1929) 120.

¹⁰⁶ Thomas *S. Th.* I q. 79, a. 4: 'aliquid principium formaliter et inhaerens'; cf. *De virt. in comm.* a. 8: 'Utrum virtutes insint nobis a natura'. This is also the essence of *De unitate*. The human individual performs the activity of cognition independently, he says there: '(((...))) quod hic homo singularis intelligit' (3,216).

¹⁰⁷ See n. 103. Cf. Thomas *S. Th.* I q. 79, a. 4, the end: the participation entails that God is 'creator animae'.

¹⁰⁸ Thomas *Comm.* L.III, l. VIII, no. 717: 'quod proprium obiectum intellectus est quidditas rei, quae non est separata a rebus, ut Platonici posuerunt'.

¹⁰⁹ Thomas *Comm.* L.III, l. X, no. 731: 'Inducitur autem Aristoteles ad ponendum intellectum agentem, ad excludendum opinionem Platonis, qui posuit quidditates rerum sensibilibus esse a materia separatas, et intelligibiles actu; unde non erat ei necessarium ponere intellectum agentem. Sed quia Aristoteles ponit, quod quidditates rerum sensibilibus sunt in materia, et non intelligibiles actu, oportuit quod poneret aliquem intellectum qui abstraheret a materia, et sic faceret eas intelligibiles actu'. Cf. Alexander 110,4-25 on τὰ κινήσαντα Ἀριστοτέλη εἰσαγαγεῖν τὸν θύραθεν νοῦν.

¹¹⁰ See above, ch. 6 and 7.

¹¹¹ Cf. Thomas *De unitate*, Prooemium 173-174.

¹¹² Thomas *De unitate*, 3,233.

¹¹³ Thomas *De unitate*, 3,234.

¹¹⁴ Thomas *De unitate*, 3, 234; cf. 2,191.

¹¹⁵ Thomas *De unitate* 3,235; cf. 1,184: 'secundum esse'/'quantum ad modum operandi'. Thomas refers (1,203, end: 'nihil enim ipsius operationi communicat corporalis operatio') to *De gen. an.* II 3, 736^b27-29. Hicks 480-481 ad ^a24 follows Thomas in this regard. But what is concerned in the passage from *De gen. an.* II 3 is the pre-existence of the νοῦς. Inasmuch as the νοῦς is pre-existent, the νοῦς is the νοῦς of God. Once it is immanent in man, however, the νοῦς does not have νοήματα without also having φαντάσματα. In its functioning, therefore, the human νοῦς is not independent of the body.

¹¹⁶ Cf. Thomas *De unitate* 3,235. *De an.* III 5, 430^a20-22; cf. *Met.* Lambda 9.

¹¹⁷ Thomas *De unitate* 5,246 sqq.

¹¹⁸ Hamelin (1953) 76-77.

¹¹⁹ Thomas *De unitate* 3,216: 'manifestum est enim quod hic homo singularis intelligit'; cf., very strongly, 3,232.

¹²⁰ Thomas *De unitate* 3,225.

¹²¹ Cf. Guillaume d'Auvergne: 'necesse igitur est ut lumen scientiae desuper adveniens totaliter cadat super animas nostras' (Gilson (1929) 77); and Thomas *De unitate* 4,244: 'Secundus autem modus est, ut illae species non sint acceptae a phantasmatibus, sed sint irradiantes supra phantasmata nostra'.

¹²² There must still be 'illumination', however; otherwise the mind would receive a sense-impression, according to Thomas. See *S. Th.* I q. 84, a. 6, in c.: 'nihil autem corporeum imprimere potest in rem incorpoream'. That the thus necessary *abstractio* is an *illuminatio* is stated by Thomas in I q. 85, a. 1, ad 4: 'dicendum quod phantasmata et illuminantur ab intellectu agente'.

¹²³ Thomas *De veritate* q. 8, a. 6.

¹²⁴ Thomas *S. Th.* I q. 79, a. 3.

¹²⁵ Thomas's interpretations of Aristotle's *De anima* have exercised a great influence on modern views of this work. See for instance the esteem in which Thomas is held by Brentano 226-229. Brentano's exaggeration does not prevent Barnes (1980) 40 n. 11 from writing in turn: 'Brentano's discussion of III 5 remains the best'.

¹²⁶ *De an.* III 8, 432^a12-14.

¹²⁷ *De an.* III 7, 431^b17-19.

¹²⁸ *De an.* III 8, 432^a9-10: τὰ γὰρ φαντάσματα ὥσπερ αἰσθητά ἐστι, πλὴν ἄνευ ὕλης.

¹²⁹ The usual, that which is frequently the case, differs from the purely necessary on the one hand and from the accidental on the other hand; see *Met.* Delta 30, 1025^a14-15.

Τῷ ὥς ἐπὶ τὸ πολὺ ἐνδέχασθαι is τῷ πεφυκέναι ἐνδέχασθαι (*An.Pr.* I 3, 25^b14-15) and this is διαλείπειν τὸ ἀναγκαῖον (*An.Pr.* I 13, 32^b5-6). Nevertheless, science and syllogism generally have the usual, i.e. that which occurs naturally and almost constantly, as their object (32^b18-21). See also *An.Post.* I 30; *Met.* Epsilon 1, 1025^b26-28; Epsilon 2, 1026^b27-33 and 1027^a20-26.

¹³⁰ Thomas *S.Th.* I q. 79, a. 4; *De unitate* 5,251.

¹³¹ Cf. Nuyens 314-315.

¹³² Cf. Nuyens 315 and Van Steenberghen 14. The latter writes: 'his ((Thomas's)) teaching on the origin of the human soul is altogether foreign to the system of Aristotle'.

¹³³ Nuyens 315.

¹³⁴ Nuyens 317: 'Le Stagiritte n'a point connu le concept de la création; le problème noétique est demeuré pour lui un problème'. Cf., in the same vein, Barbotin 240, Nuyens ('73-'74) 278, Lefèvre ('73-'74) 238, Peccorini (1976) 40 and (1979) 43. On 'the noetic problem', see also A. Mansion (1953) 465-467.

¹³⁵ Nuyens 317-318: 'Il n'a pas vu la possibilité pour l'âme d'être à la fois cause formelle du corps et principe subsistant et immatériel de la pensée'. Cf. Moraux (1955) 268, who holds that the human νοῦς is in Aristotle's view 'une faculté immatérielle'.

¹³⁶ Against Nuyens's view that in *De gen. an.* II 3 Aristotle has doubts about his solution to the problem of νοῦς, see the conclusion which Lefèvre reaches (p. 277): 'en des termes plutôt catégoriques qu'aporématiques'.

¹³⁷ See Renan (1866³) and Edwards (1960).

¹³⁸ Renan 123-124; Ravaisson I 585 and II 17, 19.

¹³⁹ See the survey of literature in Oehler 207 n. 1. Brief surveys are also found in Brentano and Kurfess.

¹⁴⁰ A. Mansion (1953) 467-469. In his view, only 430^a22-24 deals with the supra-personal mind.

¹⁴¹ According to A. Mansion (1953) 468, however, 430^a22-24 does not just talk about the causative mind, but about 'la pure essence de l'intellect', which is held to include both the active and the passive principle. Mansion does not indicate how this interpretation is supported by the text.

¹⁴² A. Mansion (1953) 468-469: 'fonction *productrice* des formes intelligibles requises précisément à l'exercice de la pensée, qui ne peut, suivant Aristote, se porter directement sur les Formes subsistantes de soi intelligibles, comme il entend les Idées platoniciennes'; cf. n. 109.

¹⁴³ See *Met.* Zeta 11 and, on that chapter, part I ch. 9 of this study.

¹⁴⁴ *De an.* III 4, 430^a5-6.

¹⁴⁵ *De an.* III 5, 430^a22.

¹⁴⁶ Cf. again Lefèvre 11-12: 'La plupart des critiques n'ont accordé que très peu d'attention aux développements touchant ce problème' (the noetic problem).

¹⁴⁷ Guthrie 315 sqq. He too is given little praise here. See the superficial rejection by Steel (1982), who takes into account neither the Neoplatonic tradition, nor Nuyens's work. Annas (1982) does not enter into the matter in her discussion of Guthrie's book.

¹⁴⁸ Rodier 29: '((...)) on peut se demander d'abord, au sujet des rapports de l'intellect et de l'intelligible, quel est celui des deux termes qui est antérieur à l'autre. Si c'est l'intelligible qui fait l'intellect, la doctrine d'Aristote se rapproche étrangement de la théorie des Idées et des interprétations néoplatoniciennes de l'aristotélisme. Si, au contraire, c'est l'intellect qui crée l'intelligible, l'objet de la pensée devient une émanation de la pensée, et la connaissance ne consiste plus, malgré les assertions réitérées d'Aristote, à s'identifier avec l'objet'.

¹⁴⁹ Theiler 142 *ad* 430^a6: 'Dem materielosen Denkenden, nicht wie bei Plato den materielosen Denkgegenständen, kommt die Führung zu'. Cf. Berti (1978) 142.

¹⁵⁰ Cf. Hamelin (1953) 21-24 and (1976³) 94. See also Couloubaritsis (1980) B 182 and 184; p. 184: 'Sur le plan de l'origine de la connaissance intellectuelle ((...)), la primauté de l'intelligible ne peut être niée'.

¹⁵¹ See Plato *Theaet.* 186d: 'Ἐν μὲν ἄρα τοῖς παθήμασιν οὐκ ἔνι ἐπιστήμη, ἐν δὲ τῷ περὶ ἐκείνων συλλογισμῷ. Cf. *Phaedo* 65b-c. It is true that in *Resp.* VI and VII Plato

distinguishes between $\eta\ \tau\omicron\upsilon\ \delta\iota\alpha\lambda\acute{\epsilon}\gamma\epsilon\sigma\theta\alpha\iota\ \delta\acute{\upsilon}\nu\alpha\mu\iota\varsigma$ (511b; 533a; 534b) and $\delta\iota\acute{\alpha}\nu\omicron\iota\alpha$, but there is nothing to show that he wishes in this way to make a distinction between discursive activity and intuition. Rather he has in mind the distinction between two kinds of discursive activity, namely the kind of reasoning which is based on $\acute{\upsilon}\pi\omicron\theta\acute{\epsilon}\sigma\epsilon\iota\varsigma$ and the kind of reasoning which aims at reaching a highest $\acute{\alpha}\rho\chi\acute{\eta}$ and which in turn proceeds to argue from this principle (511b).

Only with Aristotle's development of this question does the necessity emerge of introducing an intellectual intuition. Barbotin is therefore inaccurate in saying (p. 116): 'Si la νόησις est vraiment un πάσχειν, ((...)) l'intelligible devient premier par rapport à l'intellect, et l'on retourne à la conception platonicienne'. In actual fact it is not until Aristotle that Platonic idealism (minus the immateriality of the ideas) is given a consistent shape.

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